

Software



from Digital

April 1995

FEATURE:

**Digital Software
Integration
Frameworks;
basis software
voor Open
Client/Server
oplossingen.**

**Software van
Digital ook via
partners.**

PLUS:

Nieuwe gebruiksrechten
voor vereenvoudigde
aanschaf en gebruik.

INFORMATION NUMBER:

033-65 0000



• TOTAALOPLOSSINGEN • IMPLEMENTATIE • CONSULTANCY • OPLEIDINGEN •

TEAMLINKS • LINKWORKS • PATHWORKS • POLYCENTER-PRODUKTEN • TEAMLINKS • LINKWORKS • PATHWORKS


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VOOR

digitalTM

SOFTWARE



BEL  **033 650000**

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• TOTAALOPLOSSINGEN • IMPLEMENTATIE • CONSULTANCY • OPLEIDINGEN •

Introduction



Geachte relatie,
Ik heet u van harte welkom in de Voorjaar 1995-editie van de Software Catalogus van Digital. We zijn er trots op u opnieuw een brede selectie uit Digital's software-portfolio te kunnen presenteren. Ten opzichte van de vorige editie van de software catalogus is er het een en ander veranderd. Zo zal het bestellen van software op een andere manier plaats hebben dan u wellicht gewend was en krijgt u te maken met een nieuwe vereenvoudigde software licensingstructuur.

NIEUWE ORGANISATIESTRUCTUUR

Op 1 januari 1995 is de nieuwe organisatiestructuur van Digital in werking getreden. Belangrijk in deze nieuwe structuur zijn de veranderingen met betrekking tot het verkoopkanaal. Meer dan ooit is dit kanaal gebaseerd op het werken met partners ten behoeve van produkt distributie, het leveren van applicaties op basis van de systemen, software en infrastructuur van Digital en het uitvoeren van automatiseringsprojecten. In het hoofdartikel in deze catalogus leest u hier uitgebreid over.

INTEGRATION FRAMEWORKS

De samenhang van het produkten- en dienstenassortiment van Digital wordt schematisch weergegeven in Digital's toolbox. Een belangrijk onderdeel in deze toolbox vormen de Software Integration Frameworks. Deze frameworks voor

Technical Integration, Production Integration, Workgroup Integration, Data Integration, Network Integration en Management Integration zijn gericht op de verlaging van kosten en verbetering van ontwikkeling, implementatie en beheer van Open Client/Server-toepassingen. Zij beschermen uw investeringen door integratie van bestaande applicaties in een nieuwe Client/Server-infrastructuur. Daarnaast voorziet Digital in de hulpmiddelen voor integraal Client/Server-beheer. Op deze manier is Digital samen met haar partners, die het aanbod completeren tot een zeer compleet aanbod, in staat de steeds weer veranderende 'business needs' van uw organisatie te ondersteunen, vandaag en in de toekomst. In deze catalogus treft u een selectie van het aanbod per framework aan.

MEER INFORMATIE

In het artikel over de nieuwe software licensingstructuur kunt u meer lezen over de belangrijke wijzigingen die er op dit gebied zijn doorgevoerd. Het wordt er voor u alleen maar gemakkelijker op. Omdat er natuurlijk altijd vragen overblijven, en omdat het om een momentopname gaat, verzoeken wij u vriendelijk contact op te nemen met één van Digital's Business Partners of met uw Digital Accountmanager of te bellen op nummer 030-832100. (National Call Centre)

Met vriendelijke groet,
DIGITAL EQUIPMENT B.V.

H. op de Laak
Software Products Manager

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Software Warranty

All Digital software comes with a warranty, and in most cases this includes telephone support. **In order to register you for telephone support, however, we need the serial number of the CPU on which your software will run.** You can help us help you by including the CPU serial number on your order if it's known to you.

Terms and Conditions

The Licensing of Software to those customers without a Digital Business Agreement 'DBA', is governed by the provisions of the Standard Terms and Conditions of Digital. For those customers with a 'DBA', the terms of that agreement govern business with Digital.

Creatieve oplossingen maken het onmogelijke mogelijk.



Het idee voor de eerste parachute - zo'n 500 jaar geleden ontwikkeld door Leonardo da Vinci - was de vrucht van durf om het gebaande pad te verlaten en te kiezen voor creatieve oplossingen. Over die creativiteit zal ook de manager van vandaag moeten beschikken. De markt zowel als z'n eigen organisatie eisen dat. Bijvoorbeeld als een *tijdelijke* uitbreiding van de automatiseringscapaciteit is vereist. Of als voor een *noodzakelijke* uitbreiding op dit moment onvoldoende fondsen aanwezig zijn. De oplossing is dan niet: uitstellen, of in feite onverantwoorde investeringen doen. Wel: Digital-hardware en software huren bij DataRent (van PC tot VAX of Alpha AXP en alle Digital software). Om eventueel daarna tot aankoop over te gaan. Voor informatie: 08385-40200.

Creatief management: computerhuur bij DataRent.


DIGITAL AND APPLE AUTHORIZED RENTAL COMPANY
DataRent, Data Integration en DataLease zijn onderdeel van de Data Europe Group.

Het neusje van de zalm:

De op één na beste reseller van Digital



The Product Enterprise levert het gehele produkten- en dienstenpakket van Digital Equipment.

Het enthousiaste team staat voor u klaar om u met snelle en persoonlijke dienstverlening te ondersteunen.

De zalm. Het voorbeeld.
Krachtig tegen de stroom
in. Flexibel tegen de
watervallen op. Met het
doel duidelijk voor ogen.
Mits niet door beren
verslonden, komt
de zalm er. Daar kun je
steevast op rekenen.

HET ADVIES- EN LEVERINGSPAKKET VAN TPE

✓ Systemen, servers, werkstations en software-licenties	Alpha, VAX (Win-NT, OSF1 en OpenVMS)
✓ Storage-produkten	ook voor SUN, HP, Compaq en IBM
✓ Netwerktoprodukten	DEChubs, repeaters, routers
✓ Personal Computers en PC-servers	Intel en Alpha
✓ Terminals	VT/VXT-terminals en Multia
✓ Printers	desktop- en netwerk-printers
✓ Accessoires en supplies	tonerkitz enz.



The Product Enterprise
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THE PRODUCT ENTERPRISE NEDERLAND B.V.

ARCHIMEDESBAAN 13 3439 ME NIEUWEGEIN

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Purchasing Products and Services

ORDERING MADE EASY

At the end of each product description in this Catalogue, you'll find a list of the relevant Software Product Description numbers (SPD numbers). Reading the SPD document will give you the legal specification to which the relevant software product conforms, as well as the latest part number information for ordering.

What you will require

To use a software product, you will require three components (see table 1):

- Rights to use the software.
- Product binaries.
- Product documentation.

Rights to Use

If you do not currently have the product, you will require a standard licence (QL-*****-**): this gives you the right to use the version of the product you purchase for ever. On most products, it will also give you the *right to update* to newer versions of the same product during the first 12 months after purchase, so protecting you from having quickly obsoleted functionality.

Newer versions: Simply buy new media

If you already have the product, but now wish to move to a newer version as a 'one-off' update, you will require an update licence, which is typically 25-30% of the standard licence price. (Also see: *Staying up to date*.) Update licence part numbers are derived from standard licence part numbers — see the section on Update Licences.

Binaries and Documentation

You will need binaries to actually load the product onto your machine. Individual products are typically offered on TK50 tape cartridge, half-inch magnetic tape, Compact Disk and sometimes floppy disk — the SPD will detail available media. Note that you will require at least one copy for any product under the terms of its warranty. A set of printed manuals for each product is supplied with product binaries as a single 'media kit' (QA-*****-H*). Additional sets of manuals are also available as documentation sets (QA-*****-GZ).

Note: Whilst most products require a separate licence, there are a few which bundle licences with the media kit (QB-*****-**).

Staying up-to-date

After buying your software, you will probably want to take advantage of new functionality by moving to subsequent versions as they become available. Whilst you can do this on an ad hoc basis by

buying an Update Licence and new media kit, a cheaper alternative is to put your media kit and licence under update contract for a small monthly charge. MDDS (Media/Documentation Distribution Service) will automatically supply you by post with the latest media and documentation; SUSL (Software Update Subscription Licence) will give you the right to use that updated software. DS (Documentation Service) will update your extra documentation sets. (Note: if you have CDDS — you will not require MDDS as an update service.)

Post-sales Telephone Support

Having bought your software, you may want the assurance of having the expertise on hand to make the most of it, and resolve any problems you may encounter when using it. Telephone support from our Customer Support Centre is included as standard for all software running on hardware covered by a Digital maintenance contract. Standard cover is for working hours, although this can be optionally extended.

Table 1:	Initial Purchase	One-Off Update	SW Update Subscription
Right to use	Initial Licence	Update Licence	SUSL (SW Update Subscription Licence)
Binaries & Documentation (Individual products)	media kit	media kit	MDDS (Media and Documentation Distribution Service)
Consolidated Binaries and DOCS	← CDDS (CD Distribution Service) →		
Supplementary documentation	DOC (GZ-kit)	DOC (GZ-kit)	DS (Documentation Service)

Consolidated Distribution on Compact Disk

SOFTWARE AND DOCUMENTATION ON CDs



Everybody is familiar with the CD (Compact Disk) as a means of purchasing pre-recorded music, but increasingly the CD is used as a means of distributing other information... from games to business software. Digital has for some years been using this efficient and environmentally friendly medium to distribute the majority of its software and associated documentation.

For OSF/1, ULTRIX (RISC and VAX), OpenVMS Alpha and OpenVMS VAX platforms, Digital has now consolidated its most popular software onto sets of CDs. The CDs known as CONDIST contain the CONSolidated binary DISTribution; the CDs known as CONOLD contain CONSolidated OnLine Documentation. CONDIST and CONOLD can be purchased individually as a one-off, or together as part of a regular update CD Distribution Service (CDDS). The benefits to you of CDDS are:

- Regular deliveries of software binaries and documentation;
- On-line documentation available to anyone on the network with a windowing terminal;
- Documentation available on many products — even on those for which you have yet to buy a licence (useful when deciding whether to buy);
- Reduced storage and management requirements. For instance, OpenVMS

manuals take 18 feet of shelf space!

- Increased security (read-only media);
- Quick access to new products: order the licence, receive it by fax, load your software and use it immediately!
- The reduced cost of manufacturing and distribution is reflected in the attractive pricing of the product to you.

CD-ROM has many strengths:

- Storage capacity equivalent to 250,000 pages of text or 1,500 floppy disks;
- Rapid random access;
- Durability.

Indeed, CD distribution has proved so successful that software for the Alpha platform is available *only* on CD.

We strongly recommend taking the update services for your CD media. This offers an inexpensive way to ensure that you are kept fully up-to date with new software enhancements.

New, simpler software licensing from Digital

MAKING IT EASIER FOR YOU TO DO BUSINESS WITH US

Digital's software licensing system has recently undergone a major change for the better. Our old tiered system, with up to 22 different part numbers and prices for a single software product, was costing our customers too much time and money to use and understand. The new system is a simpler, fairer, more efficient way of ordering software licences and of upgrading licences in step with your business needs.

What changes does the new licensing system bring?

- ◆ The old, complex tiered system (up to 22 for VAX, 6 for Alpha) is replaced with three simple System Classes: Workgroup and Entry Level Server, Departmental, and Enterprise.

- ◆ No new ClusterWide licences will be sold. Instead, products currently sold with ClusterWide licences will be sold with Traditional licences. (That's another 17 CPU codes, points values and prices per product — gone, at a stroke.)
- ◆ User-based licensing of new products will be concurrent only.
- ◆ There will be simple trade-ups from one System Class to another.
- ◆ Migrating from one architecture to another will be greatly simplified too.

There is no change to ULTRIX licensing.

Easier decisions

With our three System Classes, you'll find it easier to make software purchase decisions.

It becomes simpler to initiate and manage change, in step with your business needs. You're able to move a licence across a much broader range of systems — without needless admin overhead. And you'll find it much easier to move to the next class up, or to another architecture — or both at the same time.

Taken together, these benefits will cut your administrative costs across the software life-cycle, enhance investment protection — and make it easier to do business with Digital.

Migrating and Upgrading: The 75/25 rule

One simple rule now guides most software licence migrations and upgrades when migrating like-for-like products.

(continued overleaf)

Our new System Classes at a glance.

Licence Class



"Workgroup and Entry-level Servers"



"Departmental"



"Enterprise"

VAX Systems

VAXstations, MicroVAX,
VAX 4050, 4000-1xx-A, -2xx,
VAX 11/7xx, 82xx, 83xx,
VAXft 110-610. VAXserver
2000-4000, 6000-210, -310.

VAX 4000-300, -505A,
-400, -50xA, -600A, -70xA,
VAX 6000-210, -310,
VAXft 310-810.

VAX 4000-500, -600,
VAX 6000-220, -230, -240,
-320, -330, -340, -350,
-360, -4xx, -5xx, -6xx,
VAX 7000-xxx, 85xx-89xx,
VAX 9000-xxx, 10000-xxx,
VAXserver 6000-220, -320,
-4xx, -5xx, 9000-xxx.

Alpha Systems

DEC 2000-300, -500,
DEC 3000-300, -400,
-600, -700,
Digital AlphaServer 1000.

AlphaServer 2000,
2100, DEC 3000-500,
-800, -900.

DEC 4000, 7000, 10000.

(continued from previous page)

Digital will credit you with 75% of the value of the licence being traded in against the cost of the new licence, subject to a minimum charge of 25% of the new licence's full value.

Which means that when the price of the old licence is lower than the price of the licence you're upgrading to, you get a straightforward allowance of 75% of the old licence's price. Deduct this amount from the price of the new licence, and that's what you pay.

If the price of the old licence is equal to or higher than the price of the new licence, you pay just 25% of the price of the new licence.

What the trade-in credits are based on.

For Traditional licences, the trade-in credit is based on the price of whichever new system class licence is equivalent to your current (old tiered-style) licence. For ClusterWide licences, the trade-in credit is based on the last listed price.

When you can use the 75/25 rule.

Apart from the like-for-like rule, e.g. VAX Fortran to DEC Fortran, the flexibility available to you is enormous. For example:

- Move up System Classes: Go from Class I to Class II or III.
- Change operating systems and applications: Go from OpenVMS or ULTRIX/RISC to DEC OSF/1.
- Change hardware architectures: Go from VAX or MIPS to Alpha.
- Change both architecture and class in one simple move: Go from VAX OpenVMS System Class I to DEC OSF/1 System Class III.

And that's just a few of the new possibilities we've opened up: you can also upgrade a licence:

- from Personal to Concurrent Use
- from Individual Interactive Operating System user licence to Distributed or Unlimited
- from NAS Components to NAS Package
- from User-Based to Traditional (Unlimited User) licensing.

Compare the old licensing system to our new one, and you'll see how much easier we've made it to match your licensing requirements to your business needs. For a full description of the many opportunities and the few restrictions, talk to your usual Digital software source!

Free-of-charge transfers.

The new simplified licensing offers further, even greater savings over the old tiering (for new licences). If you upgrade your hardware to a machine of the same architecture with the same operating system and within the same or lower system class, there is nothing more to pay to transfer your existing applications! If you have a new system class licence you can just move it, or, if you have an old tiered licence, talk to your Digital supplier when you upgrade the hardware.

New, simplified licence part numbers.

Our part number structure remains unchanged... what has changed is the complex choice of codes. Now, instead of dozens of different CPU codes and points ratings, you pin down the Class code that relates to you, as below.

Pop one of these into the Traditional style part number of the desired licence (provided in the SPD document), and you're ready to order!

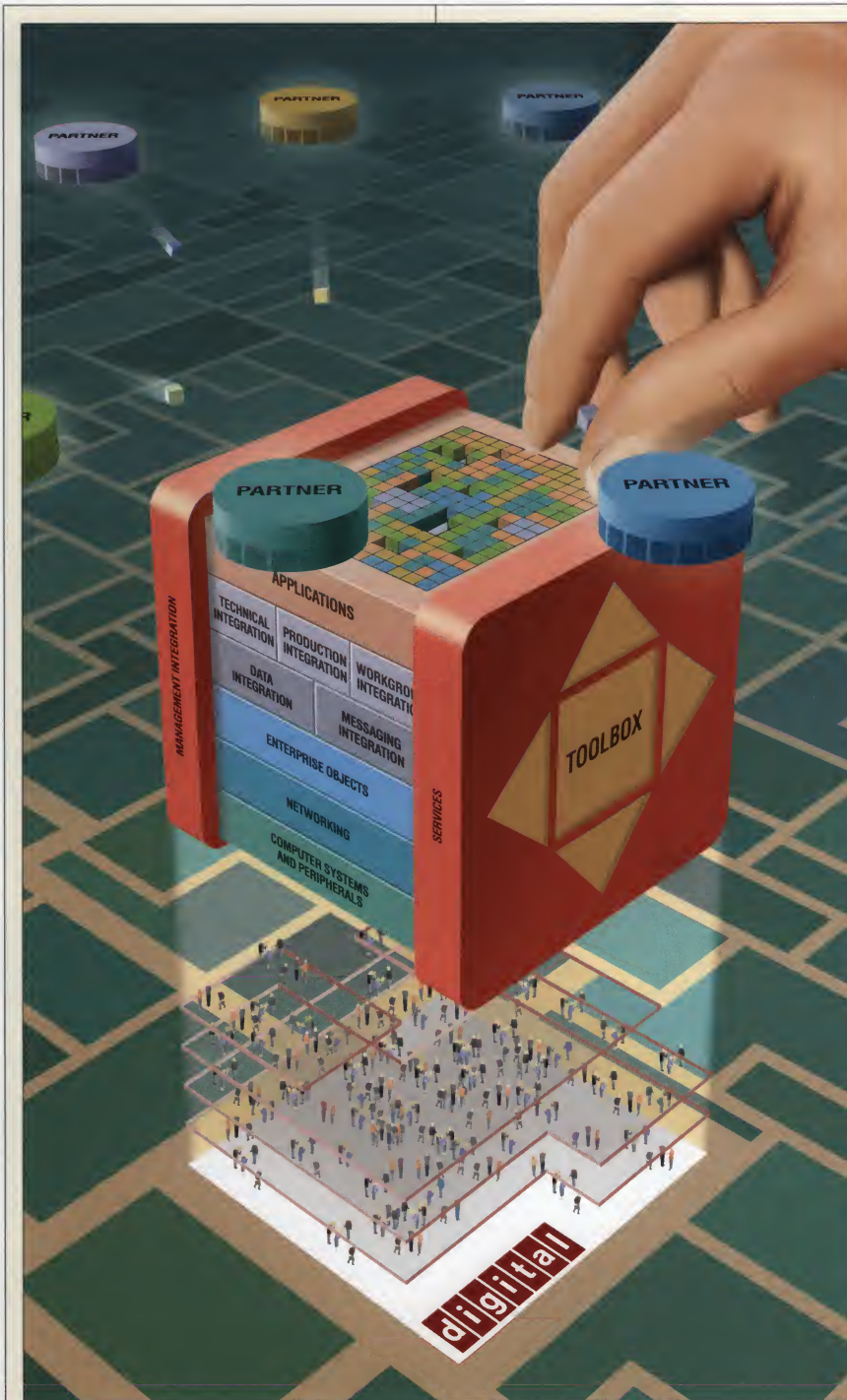
The User-Based licensing part number structure remains unchanged.

The new, simplified licence part numbers

System Class/Licence Type — VAX (OpenVMS) — Alpha (OpenVMS) — Alpha (OSF/1)

Enterprise	QL-xxxx 5 -AA	QL-xxxx Q -AA	QL-xxxx Q -AA
Departmental	QL-xxxx 2 -AA	QL-xxxx G -AA	QL-xxxx G -AA
Workgroup	QL-xxxx B -AA	QL-xxxx E -AA	QL-xxxx E -AA
Concurrent Use	QL-xxxxA-3B	QL-xxxxA-3B	QL-xxxxM-3B
Personal Use	QL-xxxxA-2B	QL-xxxxA-2B	QL-xxxxM-2B

Met Digital een stap voor!



In de periode van één jaar tussen het verschijnen van deze editie van de Digital Software Catalogus en de voorgaande is er binnen Digital het nodige veranderd. Onlangs heeft Digital de ommezwaai gemaakt naar een meer klant-georiënteerde organisatie. De nadruk ligt hierbij op verkoop via en samen met partners en een bedrijfsstructuur rondom een aantal behoorlijk zelfstandige Business Units.

In dit artikel komen de veranderingen op het gebied van organisatie, produktaanbod en marktbenadering — voorzover ze betrekking hebben op de software-produkten van Digital — aan de orde.

DE MISSIE VAN DIGITAL

De missie van een bedrijf is de verwoording van hetgeen een bedrijf voor haar klanten wil betekenen. Daarbij wordt een

relatie gelegd tussen klanten en markten aan de ene kant en de kernactiviteit(en) van het bedrijf aan de andere kant. Digital heeft ervoor gekozen om:

- een markt met een groep van ongeveer 1000 wereldwijd opererende grootste (of met de potentie hiertoe) klanten rechtstreeks te bedienen;
- het overige deel van de markt te bedienen met inschakeling van Digital's partners in nauwe samenwerking met Digital.

DE BEDRIJFSDOELSTELLINGEN VAN DIGITAL

Op corporate niveau zijn, naast de kwantitatieve doelstellingen ten aanzien van omzet en winst, Digital's belangrijkste bedrijfsdoelstellingen;

- (h)erkend worden als toonaangevend Open Client/Server-leverancier;
- vanaf 1 januari 1995 weer winstgevend zijn uit de normale bedrijfsvoering;
- acceptatie van Alpha door de markt realiseren.

Deze doelstellingen zijn vervolgens op corporate niveau vertaald naar de Business Units en de 'territories' ofwel de landen(groepen). In Nederland zijn deze doelstellingen vertaald naar doelstellingen voor de diverse Business Units.

Digital voorziet haar klanten van:

'Open Client/Server solutions from personal computing to integrated worldwide information systems. Digital's scalable Alpha platforms, storage, networking, software and services, together with the functional- and industry-focused solutions from business partners, help organisations compete and win in today's global marketplace.'

Robert B. Palmer,
CEO Digital Equipment Corporation,
Jaarverslag FY94

DE MARKETINGSTRATEGIE

De 'corporate' richtlijnen

De marketingstrategie is de vertaalslag van de bedrijfsdoelstellingen naar een aanpak om deze doelstellingen te kunnen realiseren. Uitgangspunt voor deze strategie zijn de corporate richtlijnen vanaf 1 januari 1995. Deze richtlijnen zijn opgesteld op basis van veranderende marktomstandigheden en de doelen die Digital nastreeft:

1. Back to 'core business'

Digital ontwikkelt en verkoopt informatietechnologie.

Hiermee is zij leverancier van bouwstenen (systemen, netwerkprodukten, software, etc.) ten behoeve van automatiseringsinfrastructuren en de hulpmiddelen en diensten om deze infrastructuur te ontwerpen, implementeren, beheren, gebruiken en onderhouden.

2. Invoering van een Divisie en Business Unit structuur.

Binnen de divisies en Business Units wordt gewerkt met volledige P&L verantwoordelijkheid, inclusief R&D, logistiek en Sales & Marketing.

3. Nadruk op indirecte verkoop voor kleinere en middelgrote bedrijven.

4. Verboging van het marktbereik via partners & Accounts Business Units.

Het assortiment van Digital

Digital is in staat produkten te leveren, in projecten te installeren (vaak in samenwerking met applicatie partners), te onderhouden en te helpen beheren en gebruiken.

Het assortiment van Digital is in hoofdlijnen te verdelen naar:

Products & commodity systems:

- Netwerkprodukten.
- Terminals & printers.
- Storage.
- PC servers & clients.

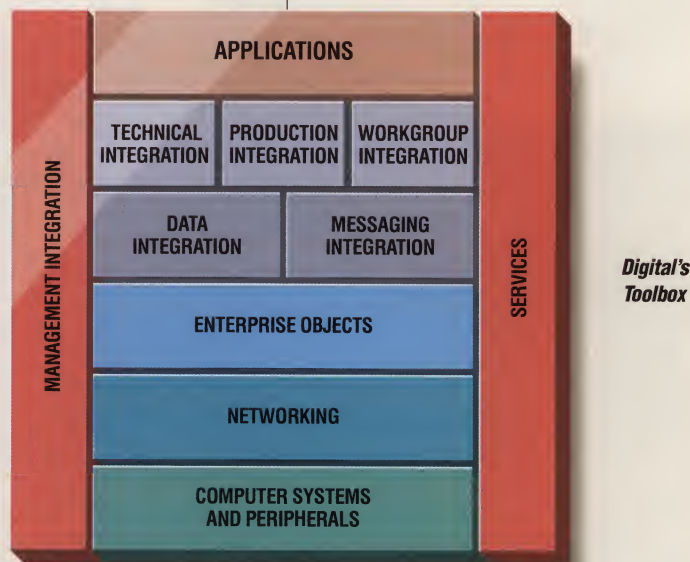
Server & complex systems:

- AlphaServer systemen.
- VAX server systemen.
- Alpha clients (voornamelijk workstations).
- VAX clients (voornamelijk VAXstations).

Software Integration Frameworks:

- Workgroup Integration.
- Messaging Integration.
- Network Integration.
- Management Integration.
- Data Integration.
- Production Integration.
- Technical Integration.

(OCS). Kenmerken van Open Client/Server Computing zijn met name de flexibiliteit en de integratiemogelijkheden van functies waardoor een hogere toegevoegde waarde van informatietechnologie (IT) aan de bedrijfsvoering van klanten kan worden geboden. Kortom: alle informatie, voor elke gebruiker, op elke plek en op elk gewest tijdstip! Aan de basis van Open Client/Server Computing staan Digital's systemen.



Services:

- Systems Integration Services (inclusief Technology & Management Consulting).
- Multivendor Customer Services
 - Network Services (inclusief PC-integratie).
 - Operations Management Services (Consulting, Support en Outsourcing).
 - Learning Services.
 - Hardware/Software Onderhoud.
 - Software Distribution Services (Software Utility).
- Financial Leasing Services (DEClease).

OPEN CLIENT/SERVER COMPUTING

De markt vraagt momenteel om een 'stijl van automatiseren'. Deze stijl van automatiseren kan onder de algemene noemer van 'Client/Server' worden geplaatst. Digital streeft naar leiderschap op dit gebied in een 'open' omgeving. Vandaar de term 'Open Client/Server'

Systemen met een zeer breed assortiment; van industrie-standaard PC's (laptops, desktops en multi-processor servers) gebaseerd op Intel processoren, tot de snelste servers en werkstations ter wereld op basis van de Alpha-processor. Daarnaast biedt Digital een breed scala aan Open Client/Server Enabling Software, de Software Integration Frameworks, en bijbehorende dienstverlening, al dan niet in samenwerking met partners.

DE MARKT

In het 'nieuwe' Digital valt de markt uiteen in twee delen; de top-accounts (ABU) en de overige accounts (niet-ABU). In Nederland zal een groep van ongeveer 40 accounts rechtstreeks worden benaderd door Digital bij de verkoop van haar assortiment aan hardware, software en dienstverlening. Wereldwijd gaat het hierbij om ongeveer 1000 accounts. Digital noemt de verkoopgroep die hiervoor staat opgesteld de Accounts Business Unit (ABU).

Voor het verkopen in de markt van de overige accounts (niet-ABU) is gekozen voor het samenwerken met en het verkopen via partners.

SAMENWERKING MET PARTNERS

Het verkoopkanaal in het 'nieuwe' Digital is meer dan ooit gebaseerd op het werken met partners ten behoeve van produkt distributie, het leveren van applicaties op basis van systemen, software en infrastructuur van Digital en het opleveren van automatiseringsprojecten.

Om het marktbereik te kunnen vergroten en verbeteren, is het opvoeren van het aantal verkooppunten noodzakelijk. Daarnaast is het van groot belang in te spelen op een gewijzigde marktvraag; kopers willen offertes van meerdere leveranciers. Dit geldt zeker voor producten die moeten worden ingepast in een bestaande omgeving. De klant weet tegenwoordig steeds beter welke producten hij nodig heeft en koopt zowel op prijs als 'bedrijf'; bedrijven die een toegevoegde waarde leveren in verhouding tot de prijs zijn dan het meest interessant. Ook voor de verschillende software integration frameworks zijn er samenwerkingsverbanden tussen Digital en gespecialiseerde partners. Voor meer informatie hierover kunt u bellen op nummer: 030-832100.

DIGITAL IS ER KLAAR VOOR

Met name het verkoopmodel voor de niet-ABU accounts vraagt om een grote naamsbekendheid van Digital, gekoppeld aan een imago dat in lijn ligt met Digital's kernactiviteiten. Met dit gegeven is een gestructureerd en consistent communicatiebeleid van essentieel belang! Aan dit beleid wordt uitvoering gegeven door:

- Een brede positionering van het merk en bedrijf Digital door met name advertenties, pers, public relations en public affairs om zoveel mogelijk vraag vanuit de markt te creëren.
- Een directe benadering van specifieke doelgroepen al dan niet in samenwerking met partners middels bijvoorbeeld seminars, direct marketing en mailings om de directe verkoop te stimuleren. Let u daarom op de vakbladen en uw post. U zult meer van Digital en haar partners horen. Wij zijn er klaar voor!

DIGITAL'S ASSORTIMENT AAN SOFTWARE-PRODUKTEN

Tijdens de annoncering in februari 1994 van een groot aantal software-producten die de Open Client/Server-boodschap van Digital ondersteunen, heeft Digital een schema geïntroduceerd dat al snel de bijnaam "Digital's Toolbox" heeft gekregen.

In deze schematische weergave van het producten- en dienstenassortiment van Digital, wordt veel aandacht gegeven aan de software-oplossingen van Digital. In de loop van 1994 hebben binnen elk individueel integration framework produkt-annonceringen plaatsgehad om de frameworks te completeren. Ook in 1995 kunt u uiteraard weer de nodigeannonceringen verwachten. Digital's toolbox is dan ook een evolutionair model.

DIGITAL'S SOFTWARE FRAMEWORKS VOOR OPEN CLIENT/SERVER OPLOSSINGEN

Digital levert software gericht op de verlaging van kosten en verbetering van ontwikkeling, implementatie en onderhoud van Open Client/Server-toepassingen. Digital's Software Frameworks voor Open Client/Server Oplossingen, ook wel Client/Server Enabling Software of Middleware genoemd, beschermen uw investeringen door integratie van bestaande applicaties in een nieuwe Client/Server infrastructuur. Daarnaast voorziet Digital in de hulpmiddelen voor integraal Client/Server-beheer. Op deze manier is Digital samen met haar partners, die het aanbod completeren tot een zeer complete propositie, in staat de steeds weer veranderende 'business needs' van een organisatie te ondersteunen, vandaag en in de toekomst.

Digital onderscheidt de volgende Software Frameworks:

• Technical Integration

Software voor het ontwikkelen van applicaties (o.a. RAD tools, High Performance Computing Tools).

• Production Integration

Hulpmiddelen voor het integreren van alle essentiële componenten van een bedrijfskritische Open Client/Server-toepassing als transaction processing (o.a. Frame Based Environment, Objectbroker, ACMS, DECDMIRE, Forté).

• Workgroup Integration

Groupware om toegang tot informatie, het delen van taken en samenwerking over workgroups heen te verbeteren (ALL-IN-1, TeamLinks, LinkWorks).

• Data Integration

Hulpmiddelen die de gegevenstoegang over database-systemen van verschillende leveranciers heen vereenvoudigen (AccessWorks-producten).

• Network Integration

Software die een Open Client/Server-netwerkinfrastructuur biedt (o.a. PATHWORKS, DECnet/OSI, TCP/IP services).

• Management Integration

Software voor het beheer van multivendor PC LAN's tot gedistribueerde netwerken (POLYCENTER-producten).

• Messaging Integration

Software ten behoeve van de uitwisseling van berichten tussen desktops, business-applicaties en handelspartners (o.a. MAILbus400, DEC X.500).

De producten in deze software catalogus zijn volgens deze frameworks ingedeeld. Binnen elke sectie treft u informatie aan over de belangrijkste producten per framework.

ONZE OPLOSSING VOOR GOEDERENLOGISTIEK IS X-LOGIC



DE ZOVEELSTE UPDATE VAN EEN OUD PROGRAMMA

oplappen

Na een aantal updates van een logistiek softwarepakket is de rek eruit. Dan worden het lapmiddelen om een oud vehicel draaiende te houden. Het werkt, maar volgens oude methodes.

oplossen

'X-Logic', een zeer uitgebreid informatie-systeem voor logistiekmanagement, is geïntegreerd met 'X-Final'.

Meerdere magazijnen, filialen, warehousing, telefonische verkoop, productie, faxkoppeling, expeditie, reststukken, projectadministratie, analytische boekhouding, budgettering, verplichtingen, flexibele rapportage, meertalig, etc.



EEN NIEUW CONCEPT
MET TOEKOMST

UW TOEKOMST MET X-INTERNATIONAL:

- ① geïntegreerde standaardpakketten X-Logic™ en X-Final™
- ② geschikt voor meer dan 20 branches, meer dan 125 gebruikers
- ③ flexibele, 4de generatie software met relationele database(s)
- ④ complete dienstverlening met hardware (onafhankelijk) en randapparatuur
- ⑤ eigen helpdesk en klassikale en 'in house' opleidingen
- ⑥ duidelijkheid vooraf middels user-audit en toepasbaarheidsstudies
- ⑦ veel 'expertise' met logistiek meedenken
- ⑧-⑧⑧ uitgebreide brochure of workshop.

COUPON VOOR EEN UITGEBREIDE KENNISMAKING MET 'X-LOGIC' EN 'X-FINAL'.

Bedrijf:

Naam:

Functie:

Adres:

Postcode en plaats:



TE HUUR



Authorized Rental Company

PER WEEK, UIT VOORRAAD

HAMILTON

COMPUTERVERHUUR

Altijd overal zolang het nodig is.

Bel voor informatie:

08385-24607.

Er is geen betere basis voor *slagvaardigheid* dan eenheid.

Automatisering is niet langer een kwestie van gemak en efficiency. Automatisering is een keihard middel om uw bedrijfsdoelstellingen te bereiken. Althans, dat zou het moeten zijn.

Daarom leveren wij als één van de grootste automatiseerders ter wereld al lang niet meer alleen maar geavanceerde, betrouwbare hardware-produkten. Een essentiële pijler in ons produktaanbod is Open Client/Server-techno-

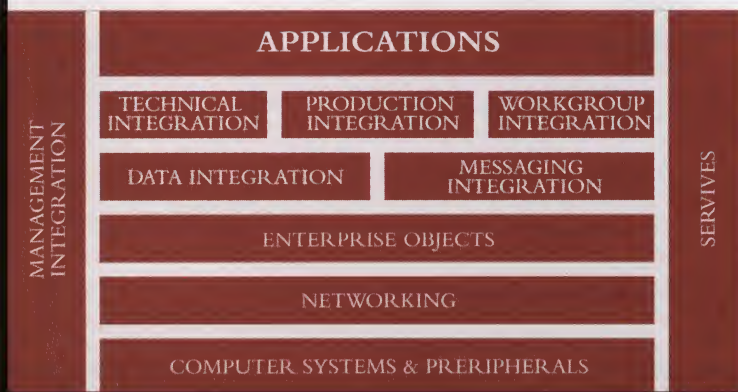
logie en de daarbij behorende integratiesoftware (ook wel middleware genoemd). Software die op elk niveau van uw bestaande automatisering – hardware, netwerken, besturingssystemen, databases, applicaties – zorgt voor flexibele koppelingen.

Ons aanbod integratiesoftware is inmiddels het meest complete op de markt en is door gebruikers en experts meermalen geroemd om zijn openheid en effectiviteit.

Het biedt u alle ingrediënten om uw bestaande hardware en applicaties – ongeacht merken en typen – tot een sterke en flexibele eenheid te smeden. Een eenheid, die uw organisatie optimaal slagvaardig maakt, met behoud van uw gedane investeringen.

Voor meer informatie of voor een lijst van geselecteerde Digital-partners belt u **030-832100** of faxt u naar **030-888094**.

Digital Equipment B.V.
Europalaan 44
Postbus 9064
3506 GB Utrecht



digital™

COHESIONWorX CASE tools for UNIX

INTEGRATED TOOLS AND A REAL PLATFORM CHOICE FOR UNIX DEVELOPERS

COHESIONWorX is a distributed UNIX software development environment supported on computing platforms from different vendors. COHESIONWorX is the foundation for COHESION Team/SEE, a software engineering solution that handles process management of medium-to-large software projects.

COHESIONWorX offers the following benefits:

- ◆ Brings together a distributed development environment using control services.
- ◆ Graphical desktop environment assigns easy-to-use icons to tools.
- ◆ Integrated development tools work together, simplifying operations and minimising errors.

Flexible yet standards-driven

COHESIONWorX is based on industry standards including POSIX, X/OPEN, CORBA, OSF/Motif, and the ANSI X3H6 draft messaging specification; support for DCE is planned for the next version of COHESIONWorX. And with Digital's support of the Common Open Software Environment (COSE), you can be sure that COHESIONWorX will comply with standards that emerge from the COSE alliance.

COHESIONWorX supports an integrated development environment through its implementation of the CORBA (Common Object Request Broker Architecture) standard, using Digital's ObjectBroker (formerly ACA) services. CORBA compliance gives engineers transparent access to development tools and data residing anywhere on a network of systems from different vendors. This ability to distribute tool execution across a multi-vendor network protects your existing investment in software tools, hardware, and training.

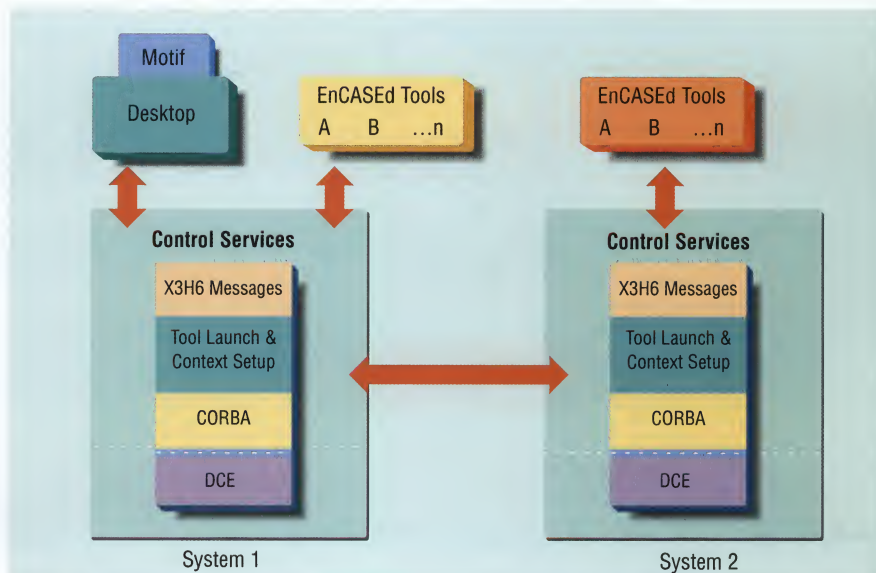
Graphical Desktop

The COHESIONWorX Desktop feature provides a graphical user interface to the distributed environment, and gives shared access to data and invocation tools residing on any system in a multi-vendor network. Work areas and toolboxes can be created to organise and store data and tools, to support specific tasks.

Modular and multi-platform

COHESIONWorX is available on several UNIX platforms; please see the Software Product Description for more detailed information. Three products make up the COHESIONWorX solution:

- COHESIONWorX.
- COHESIONWorX C++.



COHESIONWorX supports an integrated development environment through its implementation of the CORBA standard.

• COHESIONWorX EnCASE.

The base COHESIONWorX product includes DEC FUSE code development tools and an object-oriented, graphical desktop interface that enables developers to build customisable work areas for tools and project data. Support for C, FORTRAN, and PASCAL is standard. This product is a prerequisite for either the COHESIONWorX C++ or COHESIONWorX EnCASE systems.

COHESIONWorX for C++ V1.0 is an option with tools to support C++ development. C++ Class Browser, and cross-referencer and debugger functionality to support C++ development are included. A C++ licence must be purchased separately.

COHESIONWorX EnCASE provides an open, documented toolset that enables developers to add new tools to the environment easily and without tool modifications. Once integrated, a tool can be accessed from the desktop and interact with other tools anywhere in the COHESIONWorX distributed client-server environment.

Digital's COHESIONWorX Integration Program uses products such as EnCASE to assist software developers and end users to integrate new and existing development tools into the COHESIONWorX environment.

Product Name	SPD
COHESIONWorX	
Alpha OSF/1	50.63
Sun	50.64
HP-UX	50.65
TEAM/SEE	
Alpha OSF/1	50.85
Sun	50.86
HP-UX	50.87

ONZE OPLOSSING VOOR FINANCIËEL-MANAGEMENT IS FINAL



DE ZOVEELSTE UPDATE VAN EEN OUD PROGRAMMA

oplappen

Na een aantal updates van een financieel softwarepakket is de rek eruit. Dan worden het lapmiddelen om een oud vehicel draaiende te houden. Het werkt, maar volgens oude methodes.

oplossen

'Final' is een gloednieuw informatiesysteem voor financieel-management, gebaseerd op nieuwe inzichten, methoden en technieken. Vul de coupon hieronder in, dan nodigen wij u uit op onze eerstvolgende maandelijkse gratis workshop. Of bel 04192-20700.



EEN NIEUW CONCEPT MET TOEKOMST

UW TOEKOMST MET 'FINAL':

① onbeperkte definitie van bedrijven en/of afdelingen ② internationale verwerking inclusief consolidatie ③ beschikbaar in het Nederlands, Frans, Duits en Engels ④ ontwikkeld in 4GL en daardoor systeem-onafhankelijk ⑤ boekingen in bedragen en aantallen ⑥ automatische kostenverdeling ⑦ geschikt voor kleine tot zeer grote administraties ⑧ reeds in vele branches geïmplementeerd, zoals dienstverlening, handel, industrie, overheid, etc. ⑨ - ⑨⑨ worden behandeld tijdens onze workshop.

COUPON VOOR EEN UITGEBREIDE KENNISMAKING MET 'FINAL' TIJDENS ONZE GRATIS WORKSHOP.

Bedrijf:

Naam:

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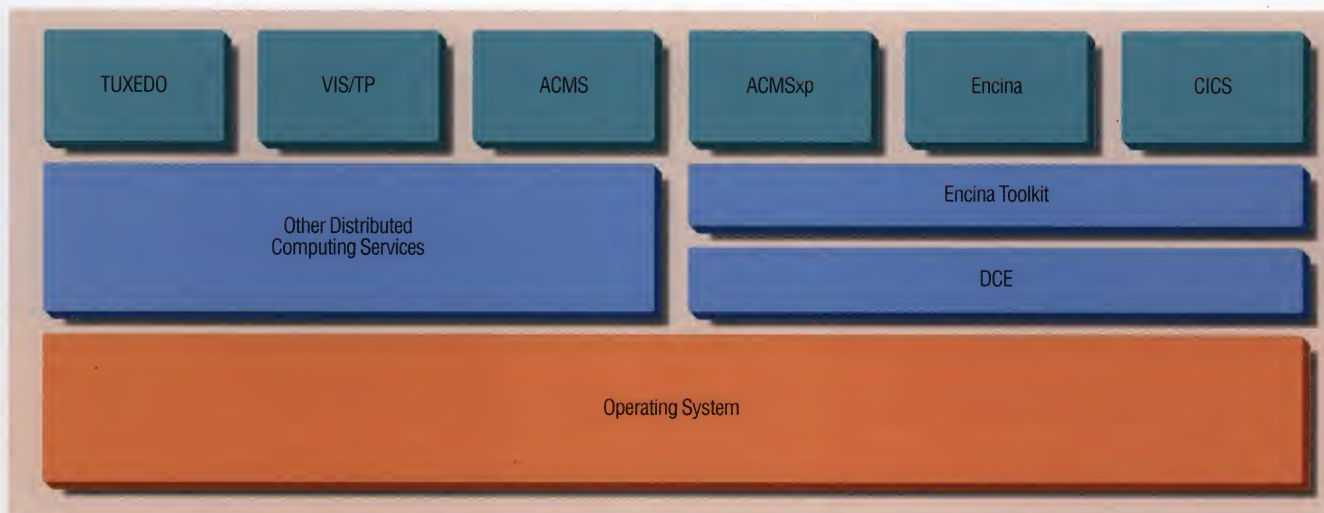
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Final
figures the future

ACMS Product Family

OPTIMISED TRANSACTION PROCESSING WITH DESKTOP ACCESS



The comprehensive ACMS product family delivers high performance and sophisticated management functions.

The Application Control and Management System (ACMS) family of products enables customers to develop, deploy, manage and maintain client/server OLTP applications. Such applications typically require high volumes of transactions to be processed quickly, reliably and continuously, to keep business databases totally up to date. The comprehensive ACMS family includes TP Middleware (also known as TP Monitors) for high performance and management functions, as well as PC Client software and tools for rapid application development.

You can use ACMS and the OpenVMS information management products to create a transaction processing development and run-time system that:

- ◆ Makes the most of your system resources.
- ◆ Gives you flexibility in how you access data and run your application.
- ◆ Provides data and transaction integrity.
- ◆ Improves programmer productivity.

More transaction-processing power

ACMS minimises system overhead and database contention in any large on-line application involving a large number of users sharing data on the same system at the same time. ACMS controls the flow of transactions, and is independent of the data management structure and the systems which capture data and process forms. ACMS can off-load the collection of transactions onto a separate OpenVMS (VAX or Alpha) processor. This can double application throughput and provide failover

capability for greater application availability, and is possible without rewriting application code thanks to the extensive ACMS application control facilities. ACMS terminal and menu functions run in processes that are separate from database or file processing and computation functions.

Development, control and management

With ACMS you can:

- Develop ACMS applications:
 - Describe, using a high-level definition language, the work or tasks a user needs to do.
 - Define access and control characteristics for users and devices.
- Control the ACMS run-time system:
 - Control what resources are available to process the tasks in an application.
 - Change system parameters at runtime, 'tuning' your usage of system resources.
- Manage ACMS applications:
 - Monitor and record system activity, application use and performance.

ACMS ensures consistency of data if your system, or part of it, goes down. It provides data integrity through full database journaling and recovery facilities. It also has its own queue-management system for deferred transaction processing, which makes it possible to recover entries without re-typing the information at a terminal.

New! ACMSxp portable TP middleware

ACMSxp is new 'portable' Transaction Processing middleware for all Digital platforms and for selected other platforms. The Application Programming Interface (API) is based on the ACMS API. ACMSxp uses OSF's Distributed Computing

Environment (DCE) and Encina services, and supports all XA compliant databases. ACMSxp is available today on DEC OSF/1 Alpha.

- Hides DCE by generating all DCE calls and managing DCE security and naming.
- Complies with MIA STD L V1.3.
- Hides the interface to Digital's transactional RPC, allowing transparent replacement of the X/Open standard TxRPC when it's available.
- Implements the tried-and-tested ACMS '3-ball' model on UNIX, using standard components from DCE and the Encina Toolkit.

ACMS Desktop

ACMS Desktop is layered client software which takes advantage of ACMS or ACMSxp as a server system to deliver robust transaction processing to multi-vendor desktop systems. ACMS Desktop offers IS professionals an incredibly rich and open environment for developing production system client/server applications.

Product Name	SPD
ACMS Desktop	34.81
ACMS for OpenVMS (Application Control and Management system)	25.50
ACMSxp for OSF/1 Alpha Application Control and Management System	50.66

DECADMIRE

MAKING APPLICATION DEVELOPMENT REALLY EASY

DECADMIRE is a prototyping and application-code generating tool for application developers on OpenVMS. High-quality code for ACMS (TP Monitor) or DECforms/3GL applications can be generated from the same prototyped design. Benefits include:

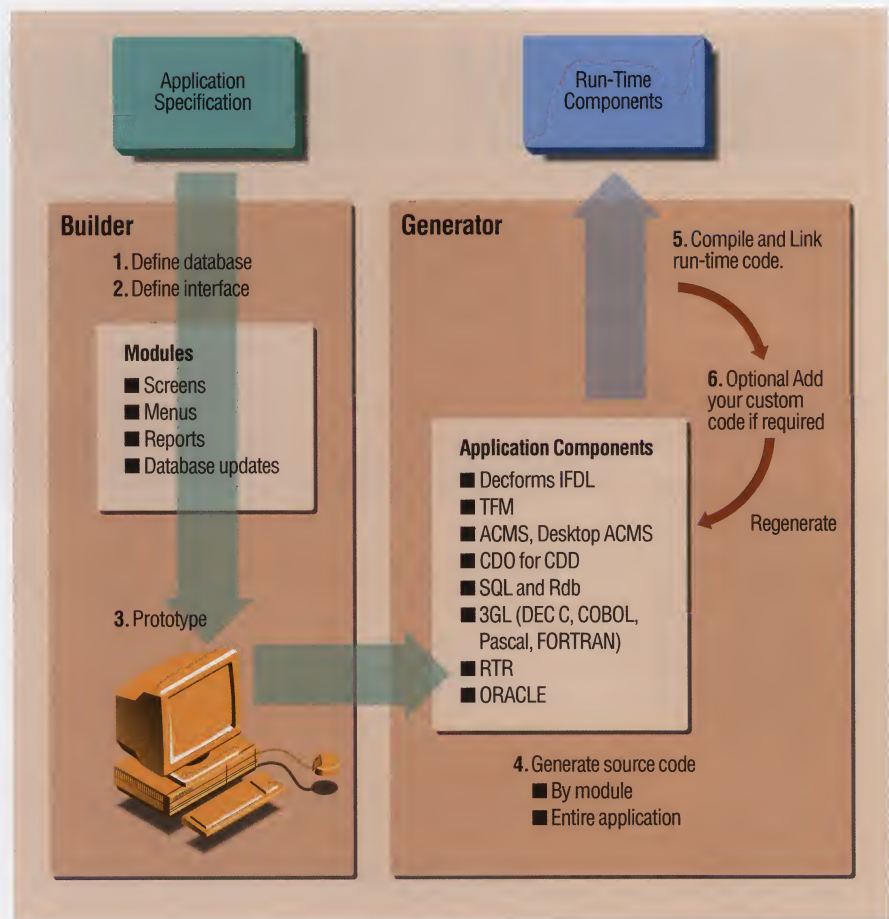
- ◆ **DECADMIRE for Visual Basic/ODBC** is the ideal solution for customers using Visual Basic as their PC GUI tool and looking to extend that GUI towards full production-class applications.
- ◆ Powerful prototyping facility allows applications to be tested before any code is generated. Developers can confirm with end users that the application meets their needs.
- ◆ Productivity improvements can be 50% or better in the coding and testing phase.
- ◆ Programmer productivity can be increased ten-fold for straightforward data maintenance routines.
- ◆ Application Development Control gives consistent look and feel to all generated applications and code, with built-in standards.
- ◆ Application design investment is protected; e.g., you can upgrade from a 3GL application to an ACMS-based application using the same design.

DECADMIRE is particularly useful in complex software environments where programmers are typically required to learn several software products to build a system. The quality of program code can be inconsistent owing to different levels of expertise within the team. In addition, development shops often stay with an existing environment, not because it is the best choice architecturally, but because it would take too much time and money to change. DECADMIRE can change that by providing a consistent approach which puts the developer above the level of coding.

DECADMIRE comprises two major components: DECADMIRE-BUILDER and DECADMIRE-GENERATOR.

DECADMIRE-BUILDER

Used by the developer to define the application's database, structure and behaviour, appearance of screens, security and reports. The entire application can be tested at this point prior to any code generation using DECADMIRE-BUILDER's prototyping capability, and screen appearance and behaviour can be modified.



Efficiency from design to code generation.

DECADMIRE-GENERATOR

After prototyping and testing, invoke DECADMIRE-GENERATOR to create the source code for each application module. You can choose between 3GLs (COBOL, PASCAL, or FORTRAN), DECforms code, CDD dictionary building, SQL for database builds, and ACMS task and task group definitions. The generated code contains no linkages to DECADMIRE (therefore no runtime DECADMIRE is required), and can be modified at will. In addition, a report generator and user documentation generator are included. (If choosing a 3GL, you will need the appropriate compiler.)

DECADMIRE Product Variants

Variants of DECADMIRE support application development in COBOL, FORTRAN, or PASCAL for time-sharing environments. Other variants for ACMS additionally allow DECADMIRE to generate complete ACMS client/server TP applications. The ACMS/COBOL product generates applications which can use Reliable Transaction Router (RTR) technology for fault tolerance.

Product Name	SPD
DECADMIRE	10.32

DECforms

THE NEXT GENERATION IN FORMS TECHNOLOGY

DECforms provides a sophisticated, high-level user interface development and programming environment that eases the task of creating, integrating and testing forms-based user interfaces for applications that require Motif-based or character cell VT device support (or both). Based on the proposed ANSI- and ISO-standard Form Interface Management System, DECforms combines in a single product all the best features of VAX FMS and VAX TDMS.

- ◆ Uses its own built-in windowing environment to display and manage multiple, overlapping form panels, simultaneously, anywhere on the screen.
- ◆ Combines simple record-level program interface calls with powerful field-level processing capabilities isolated within the form.
- ◆ Enables efficient and powerful distributed forms processing in ACMS-based OLTP environments.
- ◆ Provides a robust, WYSIWYG form-development environment.

First with ANSI/ISO Standard FIMS

DECforms is the industry's first implementation of the CODASYL Form Interface Management System (FIMS), a proposed national and international standard defined by an ANSI/ISO-accredited CODASYL committee. FIMS defines the model and supporting language for a standard interactive application form interface that offers device- and language-independence, efficient distribution, ease of use, and control flexibility.

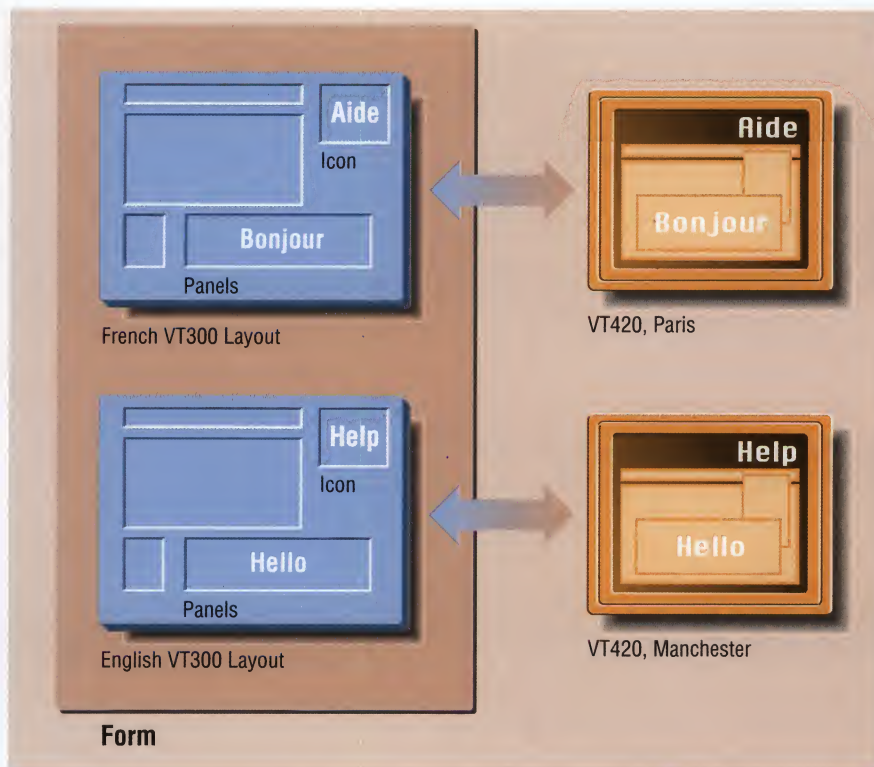
A robust set of new capabilities

DECforms offers a host of additional capabilities that make forms-based applications more powerful, more efficient, and easier to develop, maintain, and use.

- Allows a single form to be tailored for multiple environments; permits large forms of multiple pages.
- Provides in-the-form validations; scrolling regions of partial lines; supports icons, international dates and colour forms.

No more form processing

DECforms removes front-end processing from the application and isolates it in the form itself. It employs an Independent Form Description Language (IFDL) which features both declarational and procedural constructs. Field-level control, screen navigation, panel management, and validations can be performed without returning to the application program.



The unique DECforms architecture allows a single application to use a single form to multiple end-user environments.

DECforms is available in two kits: a development kit which allows developers to write and run their forms interface, and a Run-time kit which allows already developed forms applications to run. Please see the SPD for products and part numbers not listed here.

Product Name	SPD
DECforms for OpenVMS	29.90

Reliable Transaction Router

MIDDLEWARE FOR CONTINUOUS COMPUTING

Reliable Transaction Router is Open client/server middleware for continuous computing. It enables the development and deployment of widely distributed client/server applications aimed at environments in which continuous availability is required — with full transaction and data integrity — despite network, system, software or site failures.

- ◆ Provides continuous, uninterrupted service despite failures.
- ◆ Allows client/server networks to be re-configured without re-engineering applications.

Reliability for mission-critical environments

Reliable Transaction Router addresses the needs of customers who wish to integrate distributed functions, or who want to implement distributed client/server applications in environments where application downtime results in penalties — either in terms of lost profitability or customer dissatisfaction. Customers who wish to adapt their client/server networks to

meet changing business requirements can flexibly reconfigure Reliable Transaction Router applications without re-engineering applications.

Front End (client) and Back End (router/server) licences are available on OpenVMS VAX and Alpha, as well as DEC OSF/1. Client-only licences are available for DOS/Windows and ULTRIX. Digital has announced its intention to deliver Reliable Transaction Router clients on Windows NT Alpha.

Product Name	SPD
DEC Reliable Transaction Router	39.27

DEC DATATRIEVE

EASY ACCESS TO THE FACTS

DEC DATATRIEVE is a tool for managing and manipulating data either interactively at a terminal or workstation, or from an application program. By learning a handful of simple, English-like commands and statements, you can interactively retrieve, store, modify, and sort data, and report on it in a variety of ways.

With DEC DATATRIEVE, you can:

- ◆ Create data definitions that can be used to store and retrieve data uniformly, either interactively or from application programs.
- ◆ Store or modify data in local or remote RMS files, Oracle DBMS databases, or Oracle Rdb OpenVMS databases.
- ◆ Retrieve data from RMS files, Oracle DBMS databases, or Oracle Rdb OpenVMS, plus certain IBM-based databases, and display the data on a terminal, write it to a data file, or print it on paper.
- ◆ Produce formatted reports using specified selections of data.
- ◆ Create pie charts, bar graphs, line graphs, and scatter graphs based on specified selections of data.

Who needs DATATRIEVE?

DEC DATATRIEVE is intended for a broad spectrum of users, including:

- Managers who need ready access to different views of data for decision-making or supervision.
- Organisations requiring a data storage system that can be run by clerical personnel.
- Organisations that need seamless access to data on a distributed network.
- Applications programmers who want to save coding/debugging time and source space by having DEC DATATRIEVE format, sort and convert data as well as look after file handling (e.g. find, open, read and write operations).

DEC DATATRIEVE, with its simple English-like statements and Guide Mode tutorial facility, will appeal to the occasional user as well as the professional computer user.

Product Name	SPD
DEC DATATRIEVE for OpenVMS	25.44
DEC DATATRIEVE for OpenVMS Alpha Systems	52.94

DECset Software Engineering Tools

THE RIGHT TOOLS FOR THE JOB

The DECset (DEC Software Engineering Tools) packages offer professional developers truly integrated, high-quality CASE products that address the fundamentals of software engineering. DECset for OpenVMS includes:

- ◆ DECset Version and Configuration Control: DEC/CMS Code Management System.
- ◆ DECset System Builder: DEC/MMS Module Management System.
- ◆ DECset Multi-language Syntax Template Based Editor: DEC LSE Language-Sensitive Editor.
- ◆ DECset Static Analysis Tool: DEC SCA Source Code Analyser.
- ◆ DECset Regression Test Manager: DEC DTM DEC Test Manager.
- ◆ DECset Dynamic Analysis (Performance Optimiser) and Test Coverage Tool: DEC PCA Performance and Coverage Analyser.

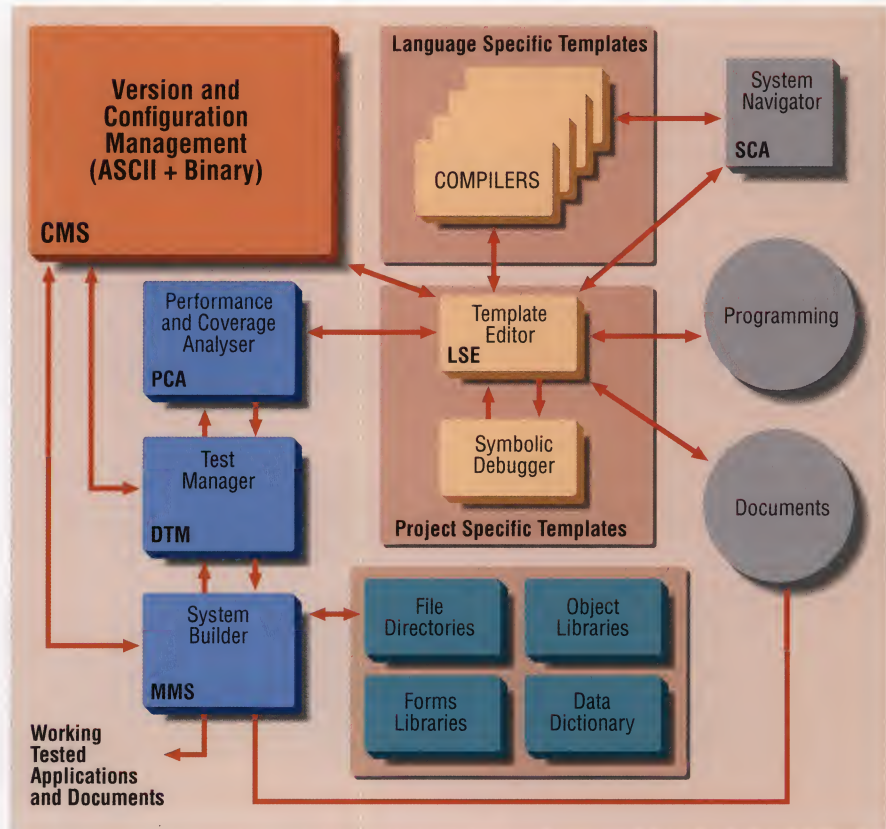
The best of working together

Each DECset component is a powerful tool in its own right, finely optimised for its specific function. Used together as part of a total CASE approach, the DECset tools combine to create a whole that is very much greater than the sum of the parts in every respect — except the price. (You'll find that it costs less to purchase the DECset tools as a package than as separate components.)

The DECset package is not a bundling of loosely associated products. The components have been carefully designed to integrate with one another and other Digital and ISV (Independent Software Vendor) tools to a very fine level, as well as offering comprehensive capabilities in their own right. The components have been used extensively by Digital's Software Engineering Organisation, as well as many independent software vendors and customers.

DECwindows Motif interfaces

Interfaces to most of the DECset tools have been revised to utilise DECwindows Motif, (subject to appropriate hardware support), making the products faster to learn and easier to use. The 'character cell' based interface has also been retained to preserve your current investment.



DECset is an integrated Program Development Environment.

'It's hard to put your finger on one or two specifics about these products; it's a thousand little things that make them so much better than anything else.'

Neil Baldrige of Compushare on DECset.
(a subsidiary of Lockheed Aircraft)

Product Name	SPD
DECset Release for OpenVMS Alpha Systems	42.29
DECset Release for OpenVMS VAX Systems	27.07

Forté

THE POWER TO CREATE DISTRIBUTED CLIENT/SERVER APPLICATIONS

Digital's commitment to provide industry-leading open client/server solutions takes another significant step forward with Forté. Forté enables experienced client server application developers to build, deploy and manage applications that run in a client/server environment across multiple computers. Key features include:

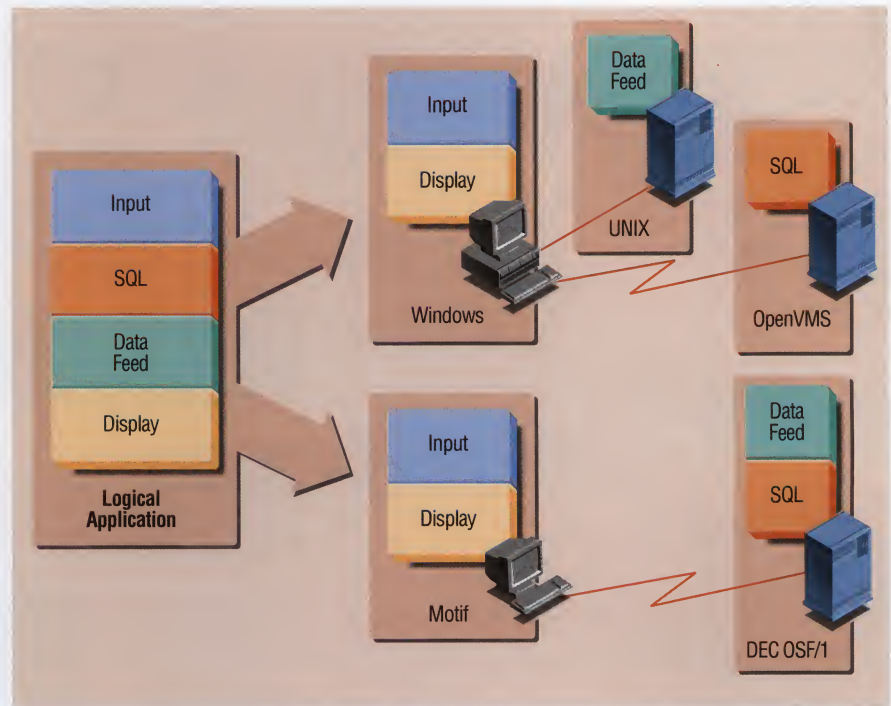
- ◆ Applications developed with Forté are independent of the underlying computing environment including hardware architectures, operating systems, networks, GUIs and databases.
- ◆ Generates truly distributed applications, including native client and server program components and middleware.
- ◆ Supports application development with an object-oriented 4GL, an object-oriented repository to store application definitions, a graphic debugger and a GUI screen painter.
- ◆ Automatically generates run-time code that is optimised for your target environment.
- ◆ Generated applications are 'partitioned' so that different parts of the application can run on different hardware and software architectures without customised programming.

Application partitioning: The technology breakthrough

Building mission-critical client/server applications for a heterogeneous and Open computing environment is very complex: you have to build application components on many systems and set up communications between them, and the applications need to match the levels of reliability and performance previously available on the mainframe.

To tackle this challenge, Digital's Forté software introduces a unique technology breakthrough: application partitioning. This technology allows you to build an application without deciding in advance how many or what types of computers will be used when the application is deployed. When development has been completed, Forté software allows you to split up (partition) the application into modules to be compiled on their target systems, thereby maximising their runtime performance.

Thanks to Forté, developers can focus on the business requirements of the application rather than on low-level implementation details. As the application functionality



Forté offers unrivalled flexibility for developers of client/server solutions.

evolves or underlying hardware/software changes, Forté allows easy re-partitioning of applications without a re-design or re-write process.

Support for mission-critical applications

With the partitioned application, Forté can support thousands of users reliably with functionality including partition failover to standby partitions for immediate application recovery, transactions on application components, and runtime version checking. To increase performance, Forté will support technologies including third-generation language (3GL) code generation, RDBMS stored procedure generation, and the ability to move application components from one machine to another as a way of reducing network traffic. At runtime, Forté provides tools for performance monitoring and application administration.

Portable solutions

Forté applications will be transparently portable across the leading hardware and software platforms. Supported GUIs will include Windows, Macintosh, and Motif; supported servers will include Digital's OpenVMS (VAX and Alpha) and OSF/1 on Alpha, Data General Avion, IBM RS6000/AIX, Sequent/Dynix, Sun (Sparc)/SunOS and Solaris, and HP/UX. The relational database management systems supported include Oracle, Sybase, and Oracle Rdb, while networks supported

will include TCP/IP, DECnet, SPX/IPX, AppleTalk and PATHWORKS. To develop an application, you require any one client and any one server.

Product Name	SPD
Forté	53.25



Baarnsche dijk 12d
3741 LS BAARN
Tel 02154 - 25275
Fax 02154 - 25308
ABN-AMRO 45.25.88.553
KvK 84025

Aan alle automatiseerders die naast
Digital's kwalitatief hoogstaande produkten
betrokkenheid en kwaliteit van de dienst-
verlener als essentieel ervaren.

AUTOMATISEREN: EEN KWESTIE VAN DE BESTE COMBINATIE!

Specialisten van VX8000
Produkten van Digital Equipment

Geachte automatiseerder,

Mogen wij ons even aan u voorstellen?

VX8000: toonaangevend middelgroot softwarehuis met duidelijk full-service karakter.

Automatiseren is een kwestie van combineren binnen het beste aanbod. Het vinden van de perfecte balans in een uitgekiende combinatie van **software, hardware en infrastructuur**, zonder het kostenaspect uit het oog te verliezen. Met als uitgangspunt dat oplossingen onverwijld in de bedrijfscultuur van de klant dienen te passen. Een uitdaging op zich, vindt u niet?

Wij leveren dan ook een breed scala aan diensten, met name aan organisaties de gebruik (gaan) maken van produkten van Digital Equipment. Ons pakket omvat onder meer: advisering, detachering, uitvoering van projecten, support en levering van zowel soft- als hardware.

Ons team bestaat inmiddels uit een 50-tal specialisten: allen professionals in het flexibel invullen van behoeften op het gebied van ontwikkeling, implementatie, exploitatie en optimalisatie van cliënt/server-systemen op VAX & Alpha AXP. Zó zijn wij in staat onze groeiende klantenkring effectieve (totaal)oplossingen te bieden voor hun automatiserings-problematiek (hardware, systeem- en applicatiesoftware).

Ons officiële partnership met Digital Equipment waarborgt daarnaast de toegang tot de nieuwste ontwikkelingen op vaktechnisch gebied.

Wanneer u automatiseren ook een ambacht vindt, moeten wij zeker eens met elkaar praten.

Aangenaam kennis te maken,
VX8000

G.J.H. Klein Bluemink
Directeur

HIERLANGS UITKNIPPEN EN BEWAREN!

Verenig

uw

databases!

Eén enkele database voor alle applicaties is het meest doelmatig, zowel vanuit het oogpunt van slagvaardigheid als vanuit beheer-optiek. In de praktijk zijn er voor bepaalde applicaties echter nu eenmaal voorkeuren voor bepaalde merken en typen databases. Een functionele eenheid dreigt daardoor in vele organisaties een utopie te blijven.

DEC ACCESSWORKS maakt hieraan een einde. Deze unieke op drie lagen gebaseerde integratie-software koppelt databases aaneen zonder zich te storen aan verschillen in structuren of leveranciers. Incompatibiliteit is verleden tijd. Uw databasebeheer wordt vergaand vereenvoudigd en de flexibiliteit van uw databases en toegankelijkheid van uw informatie wordt letterlijk optimaal.

Door uw databases te verenigen met DEC ACCESSWORKS creëert u de ideale basis voor een Open Client/Server-omgeving en voor maximale slagvaardigheid.

Voor meer informatie, een demo of een lijst van geselecteerde Digital-partners belt u **030-832100** of faxt u naar **030-888094**.

Digital Equipment B.V.
Europalaan 44
Postbus 9064
3506 GB Utrecht

digitalTM

The TeamLinks product family

MAKE YOUR MAC AND WINDOWS USERS PART OF THE ENTERPRISE TEAM

TeamLinks V2 is an outstanding team solution for workgroups of all sizes, bringing the efficiency and productivity gains of team working to PC and Macintosh platforms. Highlights include:

◆ **New in V2.1:**

- TeamLinks Office package, containing TeamLinks Mail, TeamLinks Routing, TeamLinks Conferencing, DEC VTX Client, Calendar Manager Client.
- TeamLinks integration macros for Microsoft Word 6 and Excel 5.
- TeamLinks Routing works now with ALL-IN-1 as well as with MailWorks.
- Improved document reservation facilities.
- Improved new mail notification.
- Improved performance.
- Attractive upgrade packages to TeamLinks Office for users of TeamLinks Mail, cc:Mail or Microsoft Mail.

- ◆ Familiar Windows 3.1 or Macintosh System 7 graphical user interface; integration with popular Windows and Macintosh applications such as Microsoft Word and Excel, Lotus 1-2-3, Ami Pro and WordPerfect.
- ◆ Simple, affordable, modular software packages: start with TeamLinks Mail and Shared Filing, add document routing, conferencing, library services and time-scheduling and other functions when you're ready.
- ◆ Alternatively, for a full-function solution, two complete packages have been defined: TeamLinks Office Client and TeamLinks Office Server. These packages offer a significant price advantage over buying all components separately.

New productivity in familiar environments

Today's PC and Macintosh computers are powerful and versatile, but in a couple of areas they are less well equipped when compared with users of host-based, timeshared office systems such as Digital's ALL-IN-1: the ability to work as a team, supported by powerful workgroup or team-working software; and the ability to find and use information stored across the enterprise.

Now, these small but strategic weaknesses can be addressed with Teamlinks. The full information potential of your corporate



network becomes transparently available to your PC or Mac users... without clumsy terminal emulations!

TeamLinks Electronic Mail and Shared Filing

Based on the international X.400 mail protocol, TeamLinks Mail enables users to create and respond to e-mail — within their familiar desktop environment, and without having to switch applications. Applications that currently support TeamLinks Mail include Microsoft Word, Microsoft Excel, Lotus Ami Pro, Lotus 1-2-3 and WordPerfect — and more are becoming available all the time. Highlights of TeamLinks Mail include:

- Fully customisable interface: Users can alter the look and feel of TeamLinks Mail to suit their own preferences.
- Full search facilities for both incoming and outgoing mail. Deliveries can be prioritised too.
- Very easy to use, with personal address books, nickname and address lists; real 'power' features come from the transparent link to Digital's Distributed Directory Services and our reliable gateways to public mail carriers such as CompuServe, AT&T Mail and Internet.
- Seamless integration with other users in the enterprise: for example, your ALL-IN-1 users can now routinely communicate with PC or Mac users.

Included with TeamLinks Mail is Shared Filing. TeamLinks Shared Filing gives your PC and Mac users the ability to organise their documents and data into the

industrial-strength shared-file and folder format that ALL-IN-1 users have enjoyed for years. Straight away, the old problems of locally-stored information that should have been available to everyone, the tedium of swapping disks, and the fiddly and unreliable manual file transfers, all vanish as the team starts to work in a co-ordinated, sharing way.

Other highlights of TeamLinks Shared Filing:

- Point-and-click simplicity: To launch a document, just double-click on the icon and the relevant application is automatically launched. You can even mail a message just by clicking on the document's name.
- TeamLinks presents all filing cabinets within a single menu, regardless of where the files are stored on the network.
- Everyone — PC, Mac and terminal users — has seamless access to the huge pool of corporate data. And system management becomes easier too: the tools you use to manage the ALL-IN-1 server also manage the data of PC and Mac users.

With TeamLinks, existing or new ALL-IN-1 users can use a Windows PC as their desktop: there's no need to use terminal emulation to access ALL-IN-1 mail or file cabinets.

Add TeamLinks Conferencing when you need it

With TeamLinks Conferencing, it doesn't matter whether all the team members are in the same office, or distributed across several buildings miles apart: TeamLinks Conferencing enables them to have on-line

(continued overleaf)

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team meetings, discussions and conferences without leaving their desks, and also stores all the information and ideas of the workgroup in a logically structured electronic forum that anyone in the network can access.

TeamLinks Conferencing is available as a module within the TeamLinks family, or as a stand-alone application. For more information on this powerful groupware component, please see page 27.

TeamRoute for document tracking

Your PC and Mac users routinely create electronic documents — so why not take those same electronic documents and make them part of a computerised, streamlined routing and approval system?

It couldn't be easier, thanks to TeamRoute. Just create a form or a document in your favourite Mac or Windows application, and route it to the right people using the same mail directory or personal address book you've been using with TeamLinks Mail. Once the document has been approved by the first person on the list, TeamRoute steps in and automatically forwards the approved document to the next. At any time, you can check the location and status of the document... all it takes is a couple of keystrokes.

- Enormous time-savings, particularly in large or distributed organisations.
- Recipients of your documents can approve, disapprove and acknowledge, but they can only amend, add comments or re-route with your prior authorisation. If you need it, TeamRoute also offers a password-protected electronic signature facility.
- 11 sample applications are included with TeamRoute, including travel requests; logging, tracking and distributing software versions; delegating and tracking action items. All can be customised to meet your own needs.
- TeamRoute users on your ALL-IN-1 or MailWorks system can be a seamless part of PC or Mac TeamRoute processes.

Easy to buy

The modular structure of the TeamLinks product family makes it easy and affordable to bring the benefits of groupware into your PC and Mac communities. Just choose the specific functionality you require, or choose the TeamLinks Office client to combine mail, routing, conferencing, library services and calendaring in a single package.

For a description of Group Calendaring and Scheduling, see Russell Calendar Manager on page 32. For TeamLinks Electronic Library, see VTX on Page 31.

TeamLinks Office Server

The TeamLinks Office Server package bundles TeamLinks mail and directory services, document routing, approval and tracking, sophisticated conferencing, on-line company-wide videotext service, and state of the art time and resource management into one easy to order number. In addition, by purchasing as a bundled suite, the customer receives a discounted price of 40% off the sum of the individual servers when purchased separately. The TeamLinks Office Server is the perfect complement to customers interested in the TeamLinks Office for Windows or TeamLinks Office for Macintosh offerings. TeamLinks Office Server packages are available with either the ALL-IN-1 Office Server or MailWorks for VMS as the mailserver. Upgrade packages are available for existing ALL-IN-1 or MailWorks customers who wish to add the remaining TeamLinks applications to their workgroup solution, and a migration package is available for ALL-IN-1 VAX users wishing to move to Alpha.

Upgrade path for MailWorks clients

TeamLinks Mail for Windows and Macintosh is the new, enhanced successor of DEC MailWorks client for Windows or Macintosh software, and if you use MailWorks client software we encourage you to upgrade to TeamLinks Mail. Customers with service contracts will be automatically be upgraded; those without can upgrade simply by buying an update licence and kit.

What you'll gain by upgrading includes an improved user interface, and the ability to extend your mail environment with the TeamLinks workgroup features described above. No change to your MailWorks server is required, because TeamLinks Mail and the MailWorks server are both X400 compliant.

Customisation tools

TeamLinks V2 is supported by a comprehensive software developers' kit, which includes customisation examples and 'widgets'. With tools such as Microsoft's Visual Basic, customised applications can be rapidly prototyped and deployed.

Specifications

The TeamLinks V2 client supports the following PC-to-Host connections: DECnet, TCP/IP or asynchronous.

TeamLinks Configuration Options

TeamLinks Mail requires one of the following mail services:

- MailWorks for OpenVMS
- MailWorks for OSF/1
- ALL-IN-1 IOS
- ALL-IN-1 Core Services
- ALL-IN-1 Client Services access

TeamLinks Routing requires one of the following servers:

- TeamRoute for ALL-IN-1
- TeamRoute Server for OpenVMS

TeamLinks Conferencing requires one of the following servers:

- DEC Notes for OpenVMS
- ALL-IN-1 IOS
- ALL-IN-1 Core Services

Product Name	SPD
TeamLinks Office for Windows	63.25
TeamLinks Mail for Windows	55.49
TeamLinks Routing for Windows	55.45
TeamLinks Conferencing for Windows	38.65
TeamLinks Library Services (VTX) for Windows	52.62
TeamLinks Office for Macintosh	48.17
TeamLinks Mail for Macintosh	39.62
TeamLinks Routing for Macintosh	46.23
TeamLinks Conferencing for Macintosh	41.58
TeamLinks Library Services (VTX) for Macintosh	52.62

TeamLinks Conferencing

STRUCTURED COMMUNICATIONS FOR PC AND MAC USERS

Communication within an organisation is critical to its success, whether it be by spoken word, on paper, or by computer-based methods such as electronic mail. Each of these methods has its strengths and weaknesses. Many organisations have found that introducing electronic conferencing to the workplace overcomes many of these weaknesses and adds a whole new set of business benefits.

Electronic conferencing is not in itself new: users of Digital's Notes software on VAX systems, for example, have enjoyed its advantages for years. What TeamLinks Conferencing software does now, however, is extend the power of electronic conferencing to your Windows and Macintosh users, while simultaneously integrating existing conferencing users on your ALL-IN-1 or Notes systems throughout the organisation.

TeamLinks Conferencing software for Windows and Macintosh improves communications by:

- ◆ Providing an electronic environment within which structured meetings and discussions can take place, with an automatic, written record of all matters discussed.
- ◆ Enabling personnel to participate in meetings without the cost, travel and time implications of face-to-face meetings.
- ◆ Providing a forum within which the collective expertise and experience of the enterprise can accumulate, for instant reference days, months or even years later.

Easy to use

Your PC and Macintosh users will take to TeamLinks Conferencing at once, because it's designed to match the familiar look and feel of PC and Macintosh software.

TeamLinks Conferencing software uses an intuitive topic-and-reply format, and automatically presents all inputs in chronological, titled order. As the topics fill up, users can get at the information they need in a number of ways: by author, by date, by subject, or even by key words and phrases. If all you can remember is that someone, sometime, said something about purchase orders, that's enough to bring the relevant discussion up on your screen — in seconds!

No time or distance barriers

It doesn't matter whether all the meetings 'attendees' are in the same office, or in a different building miles away, or, indeed, on another continent using a Macintosh, Windows PC, or ALL-IN-1 terminal...



TeamLinks Conferencing brings contributors together wherever they are.

Neither does it matter that a particular team member is away on a business trip or holiday. When he or she returns, TeamLinks Conferencing makes it easy to get up to date with, and contribute to, discussions that have gone on in their absence.

Easy to buy

TeamLinks Conferencing is a client/server product and may be used alone or as part of the wider TeamLinks environment. For PC and Macintosh clients, simply order the relevant client software.

TeamLinks Conferencing Server software can be either DEC Notes for OpenVMS or ALL-IN-1 IOS.

Product Name	SPD
TeamLinks Conferencing for Windows	38.65
TeamLinks Conferencing for Macintosh	41.58

ALL-IN-1 IOS Server

INTEGRATING THE ENTERPRISE

ALL-IN-1 IOS (Integrated Office System) provides a toolbox of standard office applications and development tools that are customised to suit the needs of a user community. ALL-IN-1 IOS works for more users in more languages than any other integrated office system. ALL-IN-1 IOS Server is the hub of Digital's traditional office system, which comprises ALL-IN-1, TeamLinks and associated products. The package contents include:

- ◆ Enterprise-wide Electronic Mail, based either on the Message Router MAILbus and directory service, or on MAILbus400 and X.500 directory service.
- ◆ Supports VT terminal users or, optionally, full Windows PC or Mac clients via Teamlinks.
- ◆ Can include Digital's WPS-PLUS Word Processing System, or optionally use third-party word processors such as WordPerfect.
- ◆ Time Manager features, including the ability to schedule meetings between users on geographically dispersed ALL-IN-1 systems.
- ◆ Fully integrated Videotex through the use of optional DEC VTX software.
- ◆ Includes ALL-IN-1 Group Conferencing, a version of DEC Notes for ALL-IN-1 IOS users.
- ◆ Shared File Cabinet enables collaboration on documents between team members on the same system, and extends to remote systems with Distributed Sharing Option.
- ◆ Three ways to licence ALL-IN-1: ALL-IN-1 Core Services, Client Services Access, and standard IOS licence.

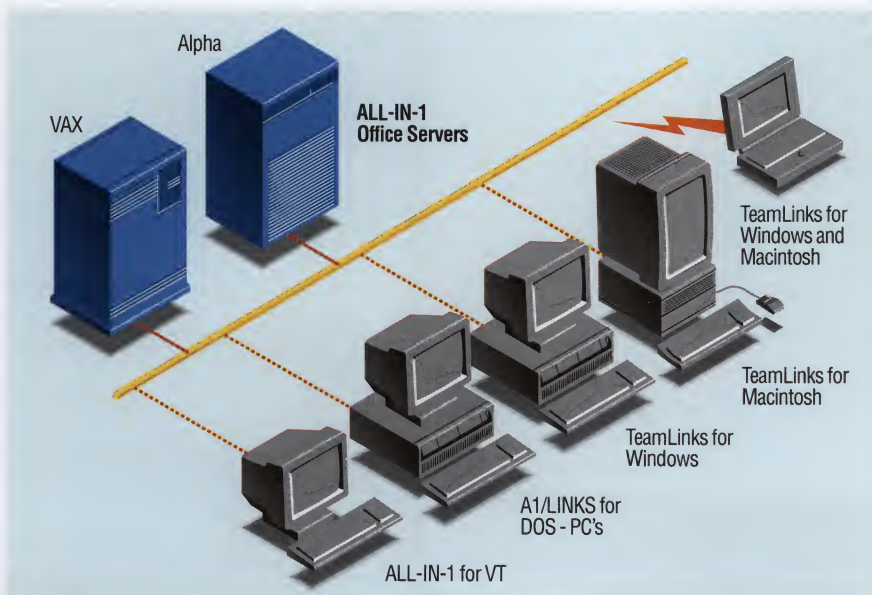
Easy to learn and customise

For terminal users, ALL-IN-1's simple menu-driven format makes it easy to learn and easy to use. Because of the consistent user interface, the experience gained in one application can be applied to others. Windows PCs and Mac TeamLinks clients can use their normal windowing interfaces to access ALL-IN-1 server functions.

Tools are included that enable ALL-IN-1's common user interface, menus and keyboard to be customised; these tools also help you integrate your business-specific applications.

Extensive communications

ALL-IN-1 (for VAX systems) includes the Message Router and Message Router



ALL-IN-1 expands to every member of your team with its multi-client platform capability, which includes TeamLinks.

OpenVMS mail Gateway. If required, you may add one or more of Digital's MAILbus products, opening up communication links to a variety of other user communities. In mid-1995, ALL-IN-1 (for Alpha systems) will be equipped with a connection to MAILbus400, enabling direct communication via X.400 and usage of X.500 directory services.

New flexible options help you move to client-server

If you don't need all the functionality contained in the ALL-IN-1 IOS Server system, Digital has introduced two low-cost options for new office system users, which support the move to client-server operations. These are ALL-IN-1 Core Services Licence and ALL-IN-1 Client Services Access Licence. ALL-IN-1 customers can move their PC and Macintosh users to TeamLinks clients, while keeping ALL-IN-1 IOS as their server. This simultaneously satisfies end-user demands to use their preferred desktop environment and applications, while enabling IS Managers to protect their investment in ALL-IN-1 and server-based business applications.

The ALL-IN-1 Core Services Licence offers the full ALL-IN-1 IOS functionality without the licence to use the WPS-PLUS word processor and the Time Management sub-system. This Core Services licence is ideal for TeamLinks users with ALL-IN-1 IOS as their server if they need to access ALL-IN-1 applications in terminal emulation mode. Staff can use their word processor of choice on the desktop and continue to use all the other ALL-IN-1

services to store and forward documents. This licence is also valuable to new terminal users who want the freedom to use their word processor and time management applications of choice, such as WordPerfect and Calendar Manager.

The ALL-IN-1 Client Services Access Licence provides new TeamLinks users — who are also new users to a non-Capacity licensed ALL-IN-1 system — with access to ALL-IN-1 IOS Mail, File Cabinet and Directory Services without incurring the cost of full ALL-IN-1. This licence is also available on a Capacity basis for brand new installations of ALL-IN-1 IOS specifically purchased to support TeamLinks clients and non-TeamLinks intelligent desktops only. This licence is not valid for VT or terminal emulation access to ALL-IN-1. A TeamLinks Client licence is also required for each TeamLinks client connected.

Distributed Sharing Option

The ALL-IN-1 Distributed Sharing Option is an extension to the ALL-IN-1 IOS server which extends the local file sharing capabilities to include remote users.

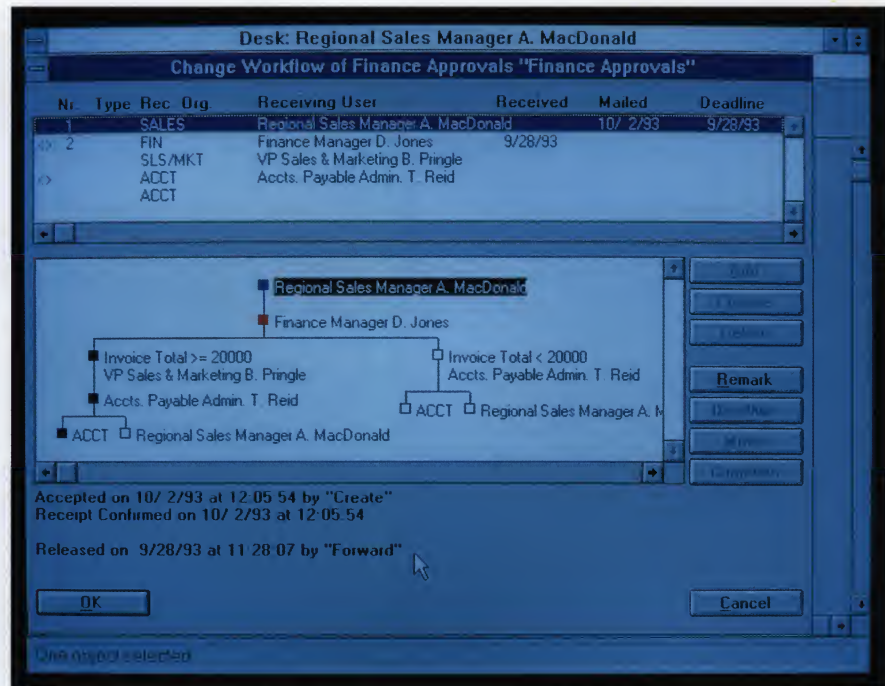
Product Name	SPD
ALL-IN-1 IOS	27.30
Distributed Sharing Option	36.79

LinkWorks

IT'S THE WAY YOU WANT TO WORK

First there was word processing; next there were personal productivity tools; then came time-shared office systems and groupware. Now, with LinkWorks, office systems move into the fourth generation, delivering efficiency improvements on a workgroup, departmental or enterprise scale using applications already present within your organisation. LinkWorks is a new class of group productivity software that brings many powerful benefits:

- ◆ An application integration framework which lets you harness the power of your existing, familiar business applications.
- ◆ Lets you define the way your workgroup should ideally work, then gives you the means of monitoring and managing those processes.
- ◆ A solution geared totally around people, processes and collaboration — the essence of business productivity.
- ◆ Seamlessly integrates users on different hardware and software platforms into a single, efficient work unit.
- ◆ New in V3: A powerful development methodology, 'Software Components', enabling other applications to be easily integrated into LinkWorks. Also in V3 are enhancements to the user interface, workflow features and Systems Administration; improved performance, enterprise scalability and mail integration features; and multi-lingual support.



Instant updates on project status... just one of the many ways LinkWorks helps build a more productive and efficient organisation.

Whether your organisation is in the process of re-engineering its business processes, or simply looking for ways of making a successful business formula work better, LinkWorks offers you a completely new solution that out-performs current 'team' or 'group' solutions in a number of powerful ways.

New efficiency from your existing applications

Most existing groupware products make a big assumption: that you are happy to have new, unfamiliar applications imposed upon

your personnel, with all the attached cost and training implications. LinkWorks, on the other hand, solves a much more challenging problem: how to take existing skills, applications, and data and structure their use into a more efficient framework. For example, take version management of a document. Rather than requiring the writers in your group to adopt a new word-processing package which delivers version management, LinkWorks lets them work with their familiar WP software and builds version management around it — tracking all changes, notifying the relevant parties of changes, and ensuring the everyone is using the most up-to-date version of the document. And it does this, not just for the WP users, but for those who generate spreadsheets, graphics, business plans, forms... just about any document in the business, regardless of the application or the type of computer used to create it.

Define the process, then let LinkWorks make it work

You know your business; you understand what the mission-critical processes are, and how they should work. LinkWorks gives you what you've been missing so far: a means of defining and formalising those processes into a structure which can be implemented, monitored and tracked right across the workgroup.

Surely it can't be that easy? Some of the members of the workgroup aren't in the same building: they're in a European or US office.

LinkWorks uses the same systems you do

As the specification below demonstrates, LinkWorks supports the desktops, servers, databases and network protocols most commonly found in businesses today.

Supported desktop platforms (clients):

- PCs running Microsoft Windows
- Macintosh computers running System 7
- PCs running OS/2 Presentation Manager
- Workstations (IBM, HP, OSF/1, Sun) running Motif

Supported server platforms:

- Intel-based systems running SCO UNIX
- Intel-based systems running NT
- Alpha systems running OpenVMS
- Alpha systems running OSF/1

- Alpha Systems running NT
- Hewlett-Packard PA-RISC systems running HP-UX
- IBM RS/6000 systems running AIX

Supported databases:

- Oracle on OpenVMS, OSF/1, HP-UX, IBM AIX and NT servers
- Informix on SCO UNIX, OSF/1 and HP-UX servers
- Ingres on OSF/1 servers
- Sybase OSF/1 and NT servers (planned)
- SQL server on NT servers (planned)

Supported network protocols

- TCP/IP
- DECnet/OSI
- IPX/SPX for NT environments (planned)

(continued overleaf)

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Some of the team work on UNIX workstations; others on Windows PCs, and still others on Macintosh computers. Even their applications aren't the same!

No problem! LinkWorks, with a wonderful disregard for traditional platform barriers, brings all these different users and systems together, ensuring that the processes you define run the same way for everyone. For example, a Mac user in London can create an Excel worksheet and drop it into the LinkWorks environment. The next step in the process you've defined calls for the worksheet to be reviewed by two personnel: one in Chicago on a UNIX workstation, the other in Milan on a Windows PC. LinkWorks forwards the worksheet to these users automatically: then, as each user opens the file, LinkWorks automatically ensures that the worksheet is translated into Lotus 1-2-3 for workstation user and Excel for Windows for the Windows user. This principle applies to all kinds of documents — from the simplest text file to files containing complex graphics.

Powerful functions

The basic capabilities offered by LinkWorks include:

- Ad-hoc document creation and management: Users can work in their usual, personal way;
- Shared filing with team members;
- Group authoring of documents: Enabling two or more people to collaborate on the creation of a document;
- Group communication and mail: This can take place within and beyond the workgroup, with links to corporate mail backbone systems;
- Work routing and electronic signature approvals: You can define the people and processes associated with a document, and identify where in the process the document currently lies, and who has seen it so far;
- Event tracking and notification of all changes in the LinkWorks environment;
- Version control: Tracking multiple versions of documents;
- Administration and management, including the ability to define and customise workgroups, projects and processes, with a high degree of security and control over access.

Using these capabilities, business managers can easily define workflow for projects and processes. Organisation structures can be set up and the way in which each workgroup member contributes to the organisation's end product can be specified.

The power to revolutionise your business

As the group starts to discover the many benefits of the LinkWorks-defined work environment, powerful new ways of working will evolve. For example, LinkWorks' advanced conditional routing capabilities might be called into play for purchase orders: if the value of the order is less than \$500, route the document to Phil for approval; if the value is greater than \$500, route the document to both Phil and Sally, moving onwards from there only if the electronic signatures of both personnel are obtained.

Flags and alerts can be triggered if any aspect of the process is incomplete or overdue. If a document is changed, a specified set of people can immediately be notified as to what has changed, and who carried out the change; the audit trail for that document will be permanently updated with a record of the change. All the time, paper-shuffling is eliminated, while the processes defined by the manager are rigorously observed.

Mobile users will be delighted to find that LinkWorks does not tie them to their desks. You can take LinkWorks wherever your laptop goes, working independently; when you next log in to the network, all your new and changed documents are automatically integrated into the big picture, as if you'd never been away.

New! The LinkWorks APO

In V2, LinkWorks provided a highly flexible, customisable, object-oriented client/server framework for the delivery of personal and groupware applications as well as new or existing business applications. The introduction of the APO concept in V3 is a significant step forward: it provides a programmable object-oriented framework. APO stands for 'Application Programmable Object', and makes it possible to program the behaviour of LinkWorks objects. Even applications can be treated as objects: for example, you could distribute them over a network connection (e.g. Internet) and easily integrate them (drag-and-drop) into an existing LinkWorks environment.

Together with its partners, Digital will provide a range of industry-specific applications, ready to integrate with LinkWorks: The LinkWorks Software Components.

For developers, the APO concept will bring rapid and cost-effective application development. For users, the new APO-derived functionality will appear as a seamless part of a LinkWorks environment customised around their specific needs.

LinkWorks wins BYTE Award!

LinkWorks was chosen by the editorial team at Byte magazine as the Best of COMDEX for Connectivity Software in Las Vegas on November 17, 1993. Said Byte's senior editor: "LinkWorks is the best business software we've seen in a long time."



Winner

LinkWorks wins CeBIT Gold Medal!

At CeBIT 1994, LinkWorks was awarded with the Software for Europe Gold Award.

The jury said that internationality, state-of-the-art and quality were the primary criteria for the award. Other criteria were the country-specific customisation, innovative techniques, Openness and Europe-wide availability.

Software for Europe

Gold Award CeBIT 94



Product Name	SPD
LinkWorks Server for OpenVMS/Alpha	51.25
LinkWorks Server for OSF/1/Alpha	48.59
LinkWorks Server for SCO UNIX	48.60
LinkWorks Client for Windows	48.55
LinkWorks Client for Macintosh	48.54
LinkWorks Client for OS/1 Pres.Mgr.	48.56

DEC Notes

MEETING OF THE MINDS

Imagine a conference without a venue, a meeting to which no one has to travel, a discussion which you can join halfway through without missing a word, a dialogue in which every word is unerringly recorded. This is DEC Notes, one of the most powerful communication tools used by Digital.

- ◆ Computer conferencing: self-documenting dialogue and discussion without limits of time, location or topic.
- ◆ Increases both the quantity and quality of information exchange within an organisation.
- ◆ Simple-to-use software enables new users and experts to participate with equal effectiveness.

DEC Notes uses a simple topic-and-reply format. Topics and replies are titled and kept in chronological order, making it easy to locate the subject in which you're interested. Digital's CDA (Compound Document Architecture) is supported, allowing the inclusion of text, data, graphics and images.

Easy to use

All DEC Notes functions are accessed either by typed commands through a terminal, via TeamLinks Conferencing on Windows PC or Macintosh, or in DECwindows Motif, via a pull-down menu. DEC Notes integrates Digital's comprehensive electronic mail capabilities. DEC Notes conferences can be open to anyone on the network, or they can be limited to a specified group.

A cost-effective solution

DEC Notes is designed using client/server technology to achieve rapid response. The Server option allows access to all of DEC Notes' capabilities, while the lower-cost Client option omits the ability to create new conferences.

Product Name	SPD
DEC Notes Server for VMS/VAX	27.06
DEC Notes Server for OpenVMS/Alpha	47.19
TeamLinks Conferencing for Windows	38.65
TeamLinks Conferencing for Macintosh	41.58

Calendar Manager

COMMON CALENDAR MANAGEMENT ACROSS MULTIPLE DESKTOPS

Calendar Manager from Russell Information Sciences offers advanced scheduling capabilities scalable from LAN to WAN level, as well as individual time-management functions.

- ◆ Real-time scheduling for users of ALL-IN-1 (terminal), TeamLinks, LinkWorks, Windows and DOS PCs, and Macintosh computers.
- ◆ A consistent and user-friendly interface in many languages (including English, Dutch, German, French and Swedish), simplifies scheduling across different platforms.
- ◆ Real-time scheduling for TeamLinks and ALL-IN-1 users.
- ◆ Calendar management available within the local workgroup, with other networked workgroups, or across the enterprise.

Efficient scheduling for you and your team

With today's increasingly hectic work schedules, tracking down all the right people for an important meeting can be a nightmare, with many wasted hours spent on the phone. So why not let Calendar Manager do all the hard work for you?

Calendar Manager provides a very user-friendly way of working, thanks to its support for easy-to-use graphical user interfaces such as MS Windows. If you wish, you can set up your agenda to look similar to your familiar, paper-based

business diary: the difference is that searching and manipulating the Calendar Manager agenda is *much* faster and easier! It's also more powerful: At the touch of a button, you'll have access to the calendars of other users, showing when they have meetings scheduled and at what times they're available. To arrange an appointment, you simply drag across an appropriate time — it couldn't be easier! If you wish, you can delegate the planning work to your secretary; different authorisation levels are available.

Calendar Manager's To-Do lists prevent you from forgetting important activities. The software also gives you various ways of looking at and printing schedules: Yearly, Monthly, Weekly, Daily and Appointment detail views, printed schedules and summaries from different viewpoints are all on instant call. The Notifier informs you about new scheduled events and imminent appointments when you choose: at log-in, when you're working in Calendar Manager, or even when you're using another program.

Calendar Manager is not just for people: it works just as well when it comes to managing the use of meeting rooms and equipment such as slide projectors or even company cars.

Multi-platform capability

Calendar Manager supports OpenVMS on VAX and Alpha, OSF/1 on Alpha as server platforms, and VTs, DOS PCs, Windows PCs and Macintosh computers as clients. Calendar Manager can be integrated with

ALL-IN-1 and TeamLinks, enabling the use of user names and other info already stored in the ALL-IN-1 directory and/or TeamLinks Personal Address Book. In 1995, a 'sometimes-connected client' will be introduced. This is the ideal solution for users with notebook PCs: it will enable them to benefit from Calendar Manager even at times when they're not connected to the network, and will handle exchange and synchronisation functions between local and central data. Calendar Manager clients have extensive on-line Help information, so it's not necessary to have constant access to paper documentation.

Product Name	SPD
Calendar Manager	53.29

DECfax Mail

INTEGRATED FAX MESSAGING GOES MULTI-VENDOR

More and more companies are using fax messages to communicate electronically. However, a recent study estimated that the average time it takes to send a fax is seven minutes. If your organisation sends 100 faxes a day, it's costing you about 60 employee hours a week. DECfax Mail for OpenVMS trimmed this non-productive time down to minutes, providing a solution based on Digital e-mail systems (ALL-IN-1, MailWorks, VMS Mail, and DECwindows Mail) and several output formats (PostScript, WPS-PLUS, DDIF, ASCII text, Sixel, DX, DOTS and DTIF). Now, DECfax Mail offers the benefits of integrated fax messaging to non-Digital mail systems and applications:

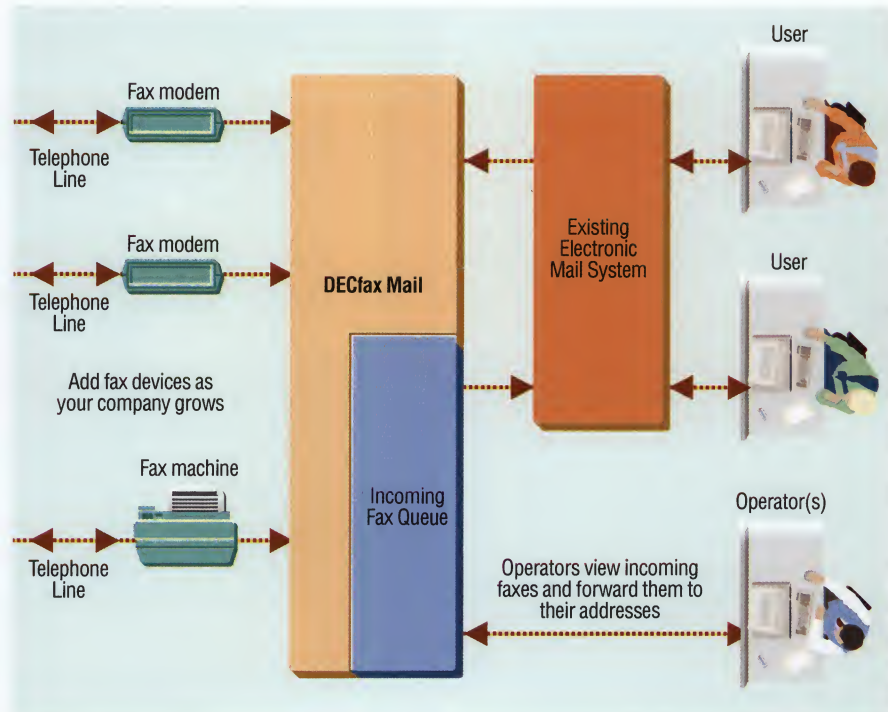
- ◆ Supports cc:mail and Microsoft Mail (via MAILbus Postmaster for LANs/WANs V3.0).
- ◆ Supports Word for Windows through the use of a macro supplied with DECfax Mail software and Teamlinks.
- ◆ Now supports additional file formats: TIFF, WordPerfect V5.0 & V5.1 for OpenVMS and PC, Microsoft Word for DOS V4.0, V5.0 & V5.5, and RTF (Rich Text Format).
- ◆ Automatically converts documents to fax format, and delivers all incoming fax transmissions as electronic mail.
- ◆ Simple, cost effective, enterprise-scalable and easy to support.

DECfax Mail operates on OpenVMS on VAX. A version for OpenVMS for Alpha is under development and is expected to be released in 1995.

WYSIWYF: What You See Is What You Fax

DECfax Mail lets you send and receive fax messages right from your desk, using your familiar mail screen, as easily and quickly as ordinary electronic mail. You can fax messages in a large variety of formats, including PostScript, text, graphics, pictures, and compound documents, and from a variety of applications.

Even when the individual documents within a single fax are of different types, DECfax Mail automatically identifies the document types, converts each of them to fax format, and mails them as a single fax. To transmit a fax message, just 'send' it to the addressee's name and fax number. You can treat fax addresses exactly like electronic mail addresses, adding them to your distribution lists and giving them



Now sending a fax is as easy as electronic mail.

nicknames. DECfax Mail 'captures' your message and transmits it, via a fax modem, through the telephone network to the recipient's fax device.

Incoming fax messages are delivered to the DECfax Mail operator's account; the operator can print messages or forward them to you electronically, either separately or attached to other documents. Electronic filing enables you to store all related messages in one organised folder, and eliminates the clutter and possible misplacement of paper fax transmissions. In addition, incoming messages can be forwarded to other addresses by electronic mail or fax. To protect confidentiality, DECfax Mail allows you to restrict operator access to the contents of fax messages.

More convenience, less cost

DECfax Mail can also help you cut time and costs in other applications. For example, an invoicing application could use DECfax Mail to send electronic invoices instead of printing them for hard-copy mail. If you send international fax messages, DECfax Mail can save you money by using the 'defer send' feature of your mail system. Faxes will then be stored and sent later, when lower telephone rates are in effect.

Apart from the efficiency it brings, DECfax Mail makes no changes to the user's familiar environment. It's therefore easy to learn and

easy to support. Because it is a fully compliant MAILbus product, DECfax Mail can support your enterprise-wide network as easily as it does a small LAN. Add DECfax Mail to your mail system, and discover real productivity and efficiency benefits — company-wide.

Fax hardware requirements

DECfax Mail can use the Hasler Fax unit, which is available from: Salcom International BV, Utrechtseweg 223, 3818 EE Amersfoort, The Netherlands, tel. 033-650 000, fax 033-611 994.

Product Name

SPD

DECfax mail

41.69

DECwrite

INDUSTRIAL-STRENGTH DESKTOP PUBLISHING

DECwrite is an all-purpose WYSIWYG (What-You-See-Is-What-You-Get) editor for users who need a tightly integrated, industrial-strength desktop publishing solution with multi-platform support.

- ◆ Available for OpenVMS on VAX and Alpha, ULTRIX, Sun SPARCstation and Microsoft Windows.
- ◆ Full functionality, including full-colour support for text and graphics, multi-page tables, conditional content and Auto-Save.
- ◆ Power publishing with ease of use.

DECwrite is ideal for producing manuals, books, product documentation, business plans and even catalogues. DECwrite can mix several languages in the same document, making it an all-purpose desktop publishing product for international enterprises.

DECwrite supports graphics, images, tables, lists, table-of-contents and index generation. Computed content like cross-references, variables, and mail merge are also supported. Equations, charts and even audio content can be included in a DECwrite document.

DECwrite's ease of use simplifies the production of complex documents. For example, its menu bar turns commonly-used actions into single-click operations.

New users find DECwrite easy to learn. Keyboard emulation is provided to facilitate users switching back and forth between DECwrite, WordPerfect, Microsoft Word and WPS-PLUS products. To improve interoperability with other desktop products, document conversion is now a standard feature in DECwrite with most popular desktop file formats being supported.

Enhanced functionality

DECwrite offers full colour support for text and graphics. Tables can be split across page boundaries. The so called conditional content feature can be used to produce different printed output from a single DECwrite document. The condition to include or exclude content might, for example, be a customer name, day of the week, or whether the document is for training or maintenance purposes.



Multiplatform Desktop Publishing.

Auto-Save has been added to complement the journalling function. On the Windows platform, OLE is supported, document converters have been added and the user interface has been improved to support MS Windows user conventions. The Windows version runs in emulation mode on Microsoft Windows NT platforms.

Product Name	SPD
DECwrite for OpenVMS on Alpha	55.59
DECwrite for OpenVMS on VAX	25.F7

Effectiever werken door pc-integratie

Het idee voor de Eiffeltoren - zo'n honderd jaar geleden ontwikkeld door Alexandre Eiffel - was de vrucht van durf om het gebaande pad te verlaten en te kiezen voor creatieve oplossingen. Ook binnen geautomatiseerde kantooromgevingen zoekt men naar creatieve oplossingen om werknemers effectiever te kunnen laten werken. Integratie van pc's op de werkplek en realisatie van een bedrijfsomvattend netwerk is zo'n oplossing. Data Integration is gespecialiseerd in het leveren van diensten en produkten om deze integratieprojecten uit te voeren en/of deze te begeleiden. Het spreekt vanzelf dat beheersbaarheid en beveiliging belangrijke factoren zijn voor het succes van werkplek-integratie.

Voor informatie: 08385-52253



Digital's netwerk en Pathworks specialist



Data Integration, DataRent en DataLease zijn onderdeel van de Data Europe Group

Software met verstand van zaken.

Ook in uw organisatie vormt kantoorautomatisering waarschijnlijk een goeddeels op zichzelf staand geheel. Praktisch gezien zou het echter vele voordelen hebben als al uw zakelijke toepassingen met uw kantoor-applicaties konden worden geïntegreerd. En dat kan nu; dankzij LinkWorks van Digital.

LinkWorks is integratie-software die de Open Client/Server-technologie ondersteunt. Deze oplossing zorgt ervoor dat alle mogelijke applicaties als een eenheid met elkaar samenwerken. Daardoor kunnen gebruikers hun werk (individueel en in teamverband) vele malen efficiënter uitvoeren. Gegevens hoeven niet meermalen ingevoerd te worden, informatie uit alle applicaties is toegankelijk, applicatie- en gegevensbeheer

wordt verbeterd, enzovoort...

LinkWorks stoort zich niet aan de verschillen tussen merken en soorten applicatie-software, maar zorgt voor effectieve, betrouwbare en veilige 'samenwerkingsverbanden' tussen al uw zakelijke en kantoor-applicaties.

Daartoe ondersteunt het besturingssystemen zoals DEC OSF/1 (UNIX), OpenVMS, Windows NT, SCO UNIX, HP-UX en IBM AIX op servers en Microsoft Windows, Apple Macintosh, Motif en OS/2 op clients.

U kunt LinkWorks bovendien volledig aanpassen aan de structuren en vereisten van uw organisatie. Niet voor niets behaalde deze oplossing in 1993 de 'best-of-COMDEX'-award in de categorie Connectivity Software

en in 1994 de 'Software for Europe Gold Award' tijdens de CeBIT!



Voor meer informatie, een demo of een lijst van geselecteerde Digital-partners belt u **030-832100** of faxt u naar **030-888094**.

Digital Equipment B.V.
Europalaan 44
Postbus 9064
3506 GB Utrecht

digital™

ACCESSWORKS Product Family

MULTIPLY THE POWER OF MULTIPLE-DATABASE ENVIRONMENTS

Digital's ACCESSWORKS family provides users with the ability to transparently access, integrate, replicate, and manage data from multiple databases in different locations with different formats.

DB Integrator, a key component of the family, is a multi-database management system designed to deliver production-quality database access and integration to enable, simplify, accelerate and manage access to all types of corporate data. It creates a single 'virtual view' which can consist of data elements from multiple data sources and be viewed by a wide range of desktop devices.

The ACCESSWORKS family provides the following benefits for both users and application developers:

- ◆ **Powerful access:** Direct read/write access from over 250 tools and applications; access to a wide variety of relational and non-relational data sources, and to custom data sources through open published interfaces. Plus cross-database data integration capabilities.
- ◆ **Simplification:** Access to heterogeneous databases through a standard SQL interface; access to distributed data via a single logical database; cross-database access by neutralising semantic differences.
- ◆ **Acceleration:** Improves response time of complex queries and updates through distributed optimisation techniques designed to minimise the movement of data across the network. Also speeds up the development and deployment of data access and integration solutions.

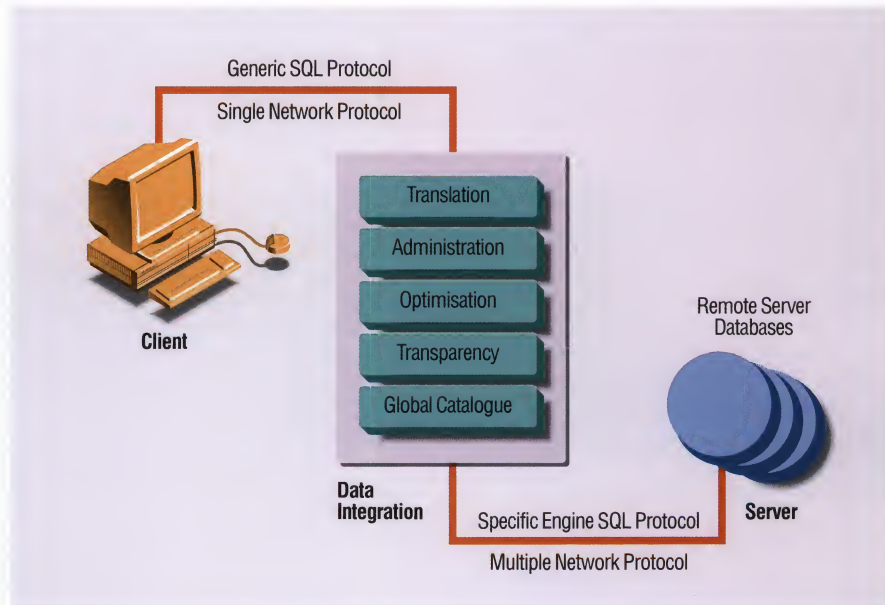
Powerful benefits

ACCESSWORKS products offer a number of important benefits targeted directly at multiple-database environments.

Data is sorted and joined at the location where network and system resources are least impacted. That means improved performance and the most cost-effective use of system and network resources.

A single logical database 'neutralises' the semantic differences and structures of underlying databases. That makes for easier use of multiple databases, as well as simplified navigation between databases.

Under ACCESSWORKS, user and programmer applications are separate from the underlying physical databases or programs — which means that databases can change in step with business needs without affecting applications and without the need for user re-training.



Access, integrate, replicate and manage data in multiple databases with ACCESSWORKS.

The ACCESSWORKS product family is broad and flexible. Access is provided from over 250 industry-leading client applications and tools, protecting your existing purchase and training investment. (For a listing of supported products, see the panel at the end of this article.)

Database-independence is another key asset: V3.1 supports Oracle Rdb, Oracle7 or Sybase as the global catalogue. Which means that it works within your existing RDBMS environment, without the need for a new database. Integration with the DB Integrator Gateways and DEC Data Distributor further extends your options for moving data flexibly around the enterprise.

The ACCESSWORKS framework

The ACCESSWORKS framework is a complementary middleware solution that works with Digital and third party components. The software products which form the foundation of this framework are:

- **DB Integrator:** For multi-database management (Oracle Rdb, Oracle7 or Sybase catalogue).
- **DEC DB Integrator Gateways:** For point-to-point data access.
- **DEC Data Distributor:** For automated, scheduled data replication.

Third-party components include:

- **Connectivity:** IBI's EDA/SQL, Techgnosis.
- **Management tools:** Patrol, InfoPump, Oracle DBA Workcenter.
- **Application development:** Various desktop software vendors and decision support tools.

Product Name	SPD
DEC DB Integrator Gateway for SequelLink	63.35
DEC DB Integrator Gateway for DSM	51.15
DEC DB Integrator Gateway for DBMS, for OpenVMS Alpha	51.14
DEC DB Integrator Gateway for DBMS, for OpenVMS VAX	51.13
DEC DB Integrator Gateway for Custom Drivers for OpenVMS	48.72
DEC DB Integrator Gateway for RMS for OpenVMS Alpha	48.71
DEC DB Integrator Gateway for ORACLE for OpenVMS Alpha	48.69
DEC DB Integrator Gateway for SYBASE	47.35
DEC DB Integrator Gateway for EDA/SQL	47.34
DEC DB Integrator	47.25
DEC DB Integrator for OpenVMS Alpha	47.24
DEC Data Distributor for OpenVMS Alpha	47.12
DEC DB Integrator Gateway for Custom Drivers for OpenVMS	45.44
DEC DB Integrator Gateway for RMS for OpenVMS VAX	32.88
DEC DB Integrator Gateway for ORACLE	32.87
DEC Data Distributor for OpenVMS VAX	27.76
DEC DB Integrator Gateway for DB2	25.87

DEC Data Distributor

MOVING DATA TO WHERE YOU NEED IT

DEC Data Distributor is an automated data access tool that enables database administrators to transfer data subsets to other systems. DEC Data Distributor fully supports the DB Integrator and DB Integrator Gateways. Running on any OpenVMS system, DEC Data Distributor makes it possible for users anywhere in your enterprise to have local copies of the organisation's central databases.

DEC Data Distributor's automated, networked transfer of data provides benefits for systems managers and for users. By running applications on a copy rather than the central database, users obtain:

- ◆ Reduced query response time.
- ◆ Reduced contention for access.
- ◆ Minimal dependence on phone lines.

- ◆ Reduced network load.
- ◆ Fewer queries to any single database.
- ◆ An increase in the number of possible users.

DEC Data Distributor delivers three types of data transfer:

Extraction: A (partial) copy from a source database to a target database. Data is made local to users, where it can be read and updated without adding to the load on the central database and its accessing processor.

Extraction roll-ups: As Extraction, except that this type of transfer consolidates data from multiple source databases into one target database.

Replication: Sends only the changes to the source database since the last transfer. This removes the need for the target database to be rebuilt whenever it needs to be brought up to date.

Product Name	SPD
DEC Data Distributor for OpenVMS Alpha	47.12
DEC Data Distributor for OpenVMS VAX	27.76

DBA Workcenter

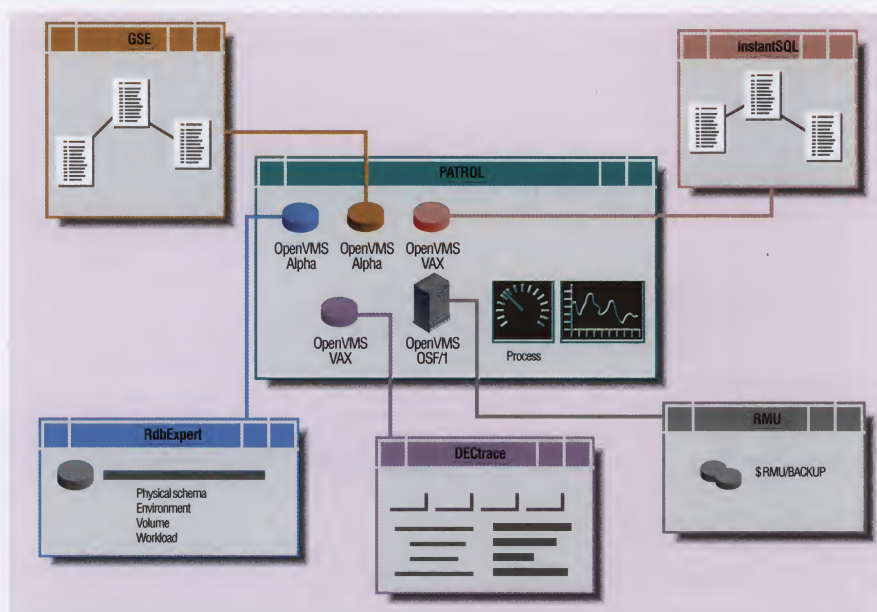
EASY DATABASE ADMINISTRATION IN HETEROGENEOUS CLIENT/SERVER ENVIRONMENTS

DBA Workcenter is a powerful, user-friendly, client/server tool that monitors and manages multiple databases and systems. Think of DBA Workcenter as a management umbrella: from a single console, it collects statistics and displays performance and status information for all your databases and applications.

- ◆ Enables you to monitor and manage distributed, heterogeneous databases in an open, client/server environment.
- ◆ Intuitive graphical user interface simplifies and automates administrative tasks in a production environment.

Database Administrators (DBAs) responsible for managing Oracle Rdb and databases across multiple platforms from Oracle, Ingres, Sybase, and Informix will find DBA Workcenter a powerful and essential contributor to a successful client/server environment.

Via its intuitive graphical user interface, DBA Workcenter simplifies and automates administration tasks such as identifying and resolving database bottlenecks and performing database backups and restores. For example, simply clicking on an icon can automatically initiate the same task across multiple systems, or tell DBA Workcenter to automatically fix a problem by restarting a database. DBA Workcenter can also perform unattended 24-hour database monitoring and management by using recovery actions triggered when



DBA Workcenter helps you monitor and manage multiple databases and systems.

performance levels reach specified thresholds.

DBA Workcenter Product Components

The DBA Workcenter product family consists of three tightly integrated tools: Patrol, RdbExpert and DECtrace, along with a wide array of optional database tools. Patrol, from Patrol Software, is an event-driven, client/server, database and system management tool. Patrol has two sub-components: a Motif client, acting as the

front-end console, and one or more agents, running on servers or administered systems, which perform various database and system tasks.

Product Name	SPD
DEC DBA Workcenter for OSF/1 Alpha	53.18

MailWorks Products

INTER-ENTERPRISE DESKTOP COMMUNICATIONS

MailWorks helps you implement a robust, enterprise-wide mail network compatible with mail systems from other vendors, and lets you do this on an international scale. It is based on the CCITT X.400 (P2) international messaging standard. The system's client/server design offers consistent messaging services to a variety of mixed desktop devices, allowing your users to choose the computing environment that meets their specific needs.

- ◆ **Store and Forward Mail service** based on a CCITT X.400 (P2) compliant user agent.
- ◆ **Offers choice of server platform:** DEC OSF/1 Alpha, OpenVMS Alpha or OpenVMS VAX.
- ◆ **Offers choice of desktop environment:** TeamLinks clients on Windows PC and Macintosh, MailWorks clients for DOS, OpenVMS DECwindows, OpenVMS Video Terminals, OSF/1 Alpha and a client for SunOS.
- ◆ **A migration path for OpenVMSmail and PC mail users to a native, inter-enterprise MAILbus environment.**
- ◆ **Access to Digital's Distributed Directory Service (DDS).**
- ◆ **Access to X.500 Directory Services.**
- ◆ **Remote dial-in for PC users, enabling mail to be collected and delivered in batches, for maximum convenience and minimum communication costs.**

TeamLinks power

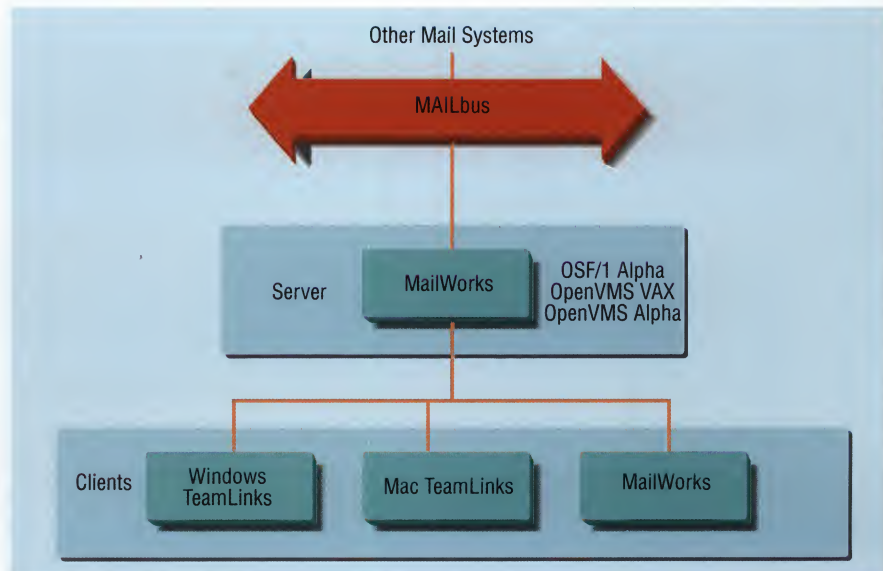
When combined with TeamLinks workgroup software, MailWorks provides a powerful set of messaging services that go far beyond basic create and send functions. These include support for complex, multi-part messages, a distributed file cabinet, integration of DDS or X.500 corporate directory and optional automated file conversion.

Industry standards

Based on full X.400 P2 recommendations, the clients give their users direct access to full, inter-enterprise, vendor-independent mail services. Users have the freedom to use their local editor of choice to compose their text, and are provided with both a personal address book and access to Distributed Directory Services present on the server.

Security

Security reflects the controls available on the MailWorks Server host. With many people now purchasing small laptop computers, MailWorks for DOS allows



MailWorks lets you implement robust mail networking.

the automated batch processing of mail collection and delivery; the server connection is not required to read, file or create messages.

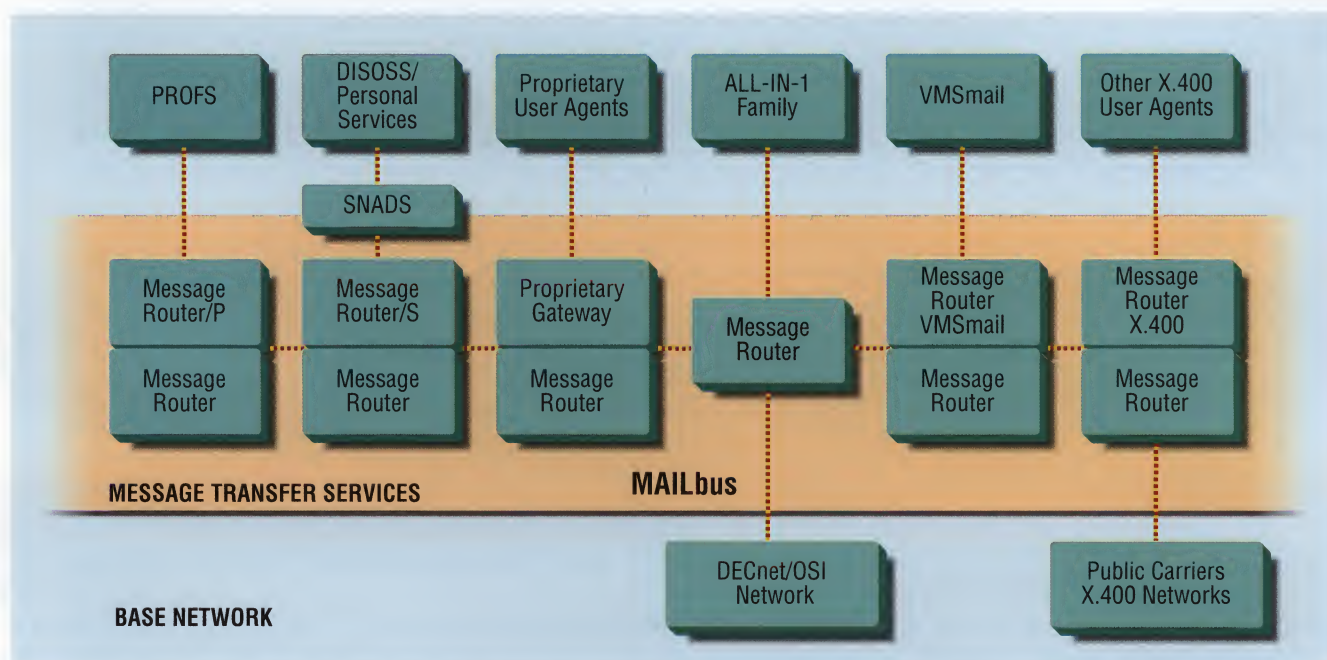
Ordering information

Operation of MailWorks requires at least one server product and one client product. Various server options exist to accommodate the LAN, WAN and routing needs in different situations. Combine any of these MailWorks servers with the TeamLinks or MailWorks client of your choice. An MS-Mail driver is available to support Microsoft Mail clients. When using the cc:Mail connection, users are upgraded from the file sharing technology to MailWorks client/server messaging.

Product Name	SPD
Servers:	
MailWorks for OpenVMS	39.59
MailWorks for OSF/1 Alpha	45.16
Clients:	
MailWorks for OpenVMS DECwindows	39.59
MailWorks for OpenVMS Video Terminals	39.59
MailWorks for DOS	39.58
MailWorks for OSF/1 Alpha	45.16
MailWorks for SunOS	①
Extensions:	
MS-Mail Driver	55.71
cc:Mail Connection	①

MAILbus products

ACCESS TO THE WORLD



Digital's MAILbus products extend the power and reach of your organisation's communication systems, and help create an integrated user communication environment. MAILbus products can:

- ◆ Operate as Store and Forward Mail Message Routers.
- ◆ Provide seamless transfers between different electronic mail systems.
- ◆ Operate transparently with ALL-IN-1, OpenVMSmail, X.400, PROFS, SNADS, OfficeVision, PC mail systems and several UNIX-compatible transfer agents.

Designed as add-ons to the VAX Message Router Software (which is the core store-and-forward mail handler), the MAILbus software products include:

VAXmail

OpenVMS comes with a basic electronic mail facility, which does not provide store-and-forward capabilities. To enhance MAIL with this and other MAILbus capabilities, use the Message Router OpenVMSmail Gateway.

ALL-IN-1

ALL-IN-1 comes bundled with the Message Router and an electronic mail sub-system. Other Message Router products can be added to reach across to other mail environments.

X.400 Inter-Enterprise Mail

The Message Router X.400 Gateway provides a connection between your Digital systems and private and public mail systems that support CCITT standards.

IBM Office Systems

Message Router/P (PROFS) Gateway allows electronic mail and revisable and final-form documents to be transparently exchanged between the DECnet environment and IBM PROFS or IBM CMS in an SNA environment.

Message Router/S (SNADS) Gateway allows the transparent exchange of electronic mail, revisable and final-form documents, between Digital and IBM Office Systems. IBM Systems 36, 38 and the IBM 5520 also support SNADS, through the IBM mainframe.

MAILbus Postmaster for LANs/WANs

The MAILbus Postmaster integrates Lotus cc:Mail and Microsoft Mail into the enterprise messaging services of MAILbus. The MAILbus Postmaster is made up of two components: together, they provide multi-vendor mail management and integration services throughout the enterprise.

Product Name	SPD
VAX Message Router	26.33
VAX Message Router OpenVMSmail Gateway	26.33
VAX Message Router Programmers Kit	26.33
VAX Message Router X.400 Gateway	27.50
VAX Message Router/P Gateway	28.94
VAX Message Router/S Gateway	29.24
MAILbus Postmaster for LANs	36.59
MAILbus Postmaster for WANs	36.59

MAILbus 400

STANDARDS BASED WORLDWIDE ELECTRONIC MESSAGING

MAILbus 400 is a family of products that provide a reliable messaging service based on the industry-standard 1988 and 1992 X.400 Message Transfer Agent (MTA). MAILbus 400 products are available for DEC OSF/1 Alpha, OpenVMS Alpha and OpenVMS VAX platforms.

- ◆ Production quality, easy-to-manage, messaging system for information-sharing among electronic mail users.
- ◆ Mail exchange gateway between traditional (e.g. UNIX or NetWare) mail and the X.400 mail community.
- ◆ Allows support for automated document conversion when integrated with converters.

MAILbus 400 Message Transfer Agent (MTA)

The MAILbus 400 MTA provides the messaging system based on the 1988 and 1992 X.400 MTA standards. In addition, it incorporates the X.500-based directory component that enables the MTAs to share routing information. MAILbus 400 MTA is typically used in conjunction with other Digital-supplied messaging products, such as user agents and gateways.

MAILbus 400 features include:

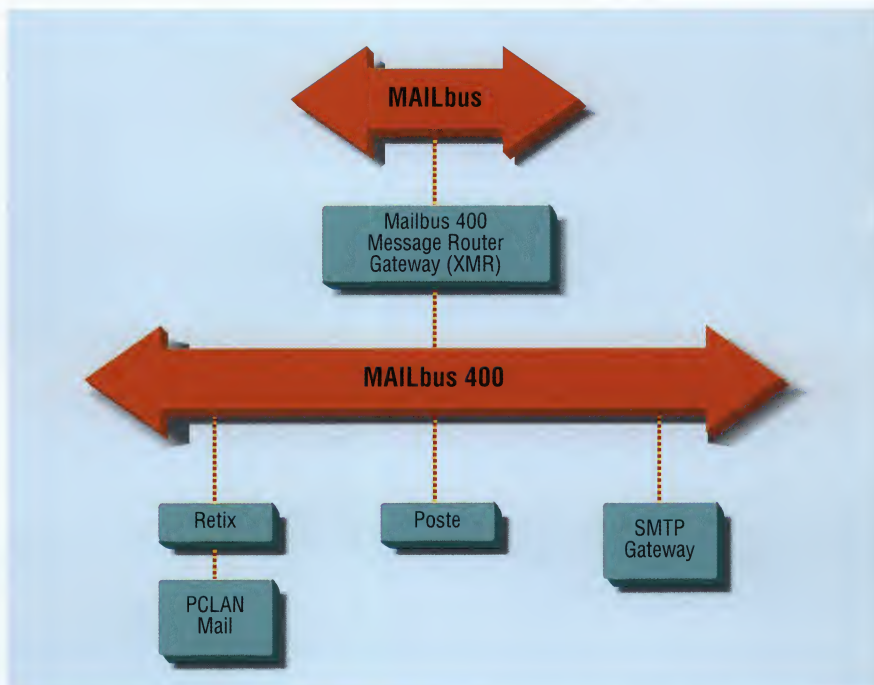
- Optional integration of CDA converters to enable use between different desktop applications.
- Default settings get you up and running quickly.
- No single point of routing failure; automatic failover to alternate routes.

MAILbus 400 Application Programming Interface (API)

The MAILbus 400 API gives application developers access to the messaging services of the MAILbus 400 MTA, via the vendor-independent XAPI interface. MAILbus 400 API is an implementation of the X/Open CAE specifications 'OSI Abstract Data Manipulation' and 'API to Electronic Mail'. MAILbus 400 API provides both the Application and Gateway interfaces, excluding the 'Retrieval Functional Unit'.

MAILbus 400 Simple Mail Transfer Protocol (SMTP) Gateway

The SMTP Gateway for DEC OSF/1 enables mail exchange between the traditional UNIX mail community and X.400 mail users. The gateway is able to use the backbone management facilities and to handle address translation through either the X.500-based routing directory or ad-hoc addressing.



MAILbus 400 provides a reliable messaging service based on the 1988 and 1992 X.400 industry standard.

MAILbus 400 Message Store

The MAILbus 400 Message Store for DEC OSF/1 provides Remote User Agents, using the P7 access protocol, with message store and submission services. Message Store inter-operates with User Agents conforming to the X.413 recommendation in OSI environments and can also operate over TCP/IP networks, using the RFC 1006 protocol.

MAILbus 400 Message Router Gateway (XMR)

The MAILbus 400 Message Router Gateway for OpenVMS facilitates the migration of existing users of the Digital MAILbus (Message Router) based systems to MAILbus 400 Message Transfer Agent based X.400 messaging environments.

Product Name	SPD
OpenVMS:	
MAILbus 400 Message Transfer Agent for OpenVMS	42.83
MAILbus 400 Application Programming Interface for OpenVMS	42.80
MAILbus 400 Message Router Gateway for OpenVMS VAX	53.65
OSF/1:	
MAILbus 400 Message Transfer Agent for OSF/1 Alpha	46.89
MAILbus 400 Applic. Progr. Interf. for OSF/1 Alpha	46.90
MAILbus 400 SMTP Gateway for OSF/1 Alpha	46.91
MAILbus 400 Message Store for OSF/1 Alpha	51.22

DEC/EDI

ELECTRONIC DATA INTERCHANGE

DEC/EDI enables users to electronically exchange structured business documents with their trading partners using EDIFACT, ODETTE, TRADACOMS, ANSI X.12, TDCC and other EDI industry standards. The client/server architecture of DEC/EDI enables flexible deployment across the enterprise to provide an EDI capability to applications hosted on multiple platforms.

- ◆ Support for international, national and industry standards.
- ◆ Information can be transmitted directly or through a number of VANs.
- ◆ Management, tracking, and routing features.
- ◆ Enterprise-wide access to EDI transaction status information.
- ◆ Application clients on multiple platforms.

Organisations want to reduce the costs of transacting business with their customers, suppliers and other trading partners. EDI is the application-to-application, computer-to-computer exchange of business data in standard formats. EDI reduces or eliminates the human resource, paper handling costs and delays typically incurred with routine paper transactions between trading partners.

Open Client/Server

DEC/EDI uses a client/server architecture to provide EDI services to local and remote applications. ObjectBroker is used to link local and remote DEC/EDI application clients to the DEC/EDI server. Application clients are available today for OpenVMS VAX, OpenVMS Alpha, DEC OSF/1 Alpha, IBM AIX and HP-UX.

DEC/EDI Application Client

The application clients facilitate the integration of local and remote business applications to the DEC/EDI server, to make them EDI-capable. Both a command-line interface and an application programming interface are provided.

DEC/EDI Filebridge

Filebridge is a table-driven 'mapper' with a set of data manipulation operators. This capability is used to convert data from the business application format to that required for translation into the appropriate trading partner format by the DEC/EDI translation component.

DEC/EDI Communication Component

The communications component supports a range of communications options, including OSI. It is fully integrated with



DEC/EDI enables users to electronically exchange structured business documents with their trading partners.

the Digital MAILbus 400 and supports the CCITT X.435 recommendations.

Cockpit

A windows based system monitor, which allows a graphical display of the status of EDI documents. Provides a continuous and accurate view of the traffic of business documents.

Ordering Information

Runtime packages are available for server deployment on a single node, each including the indicated communications component, the required application client, selected translation component and the Filebridge runtime module.

Additional application clients on multiple platforms can be added. Filebridge Development is needed to setup the data specification and mapping rules of individual fields.

Product Name	SPD
DEC/EDI Bisynchronous Package for OpenVMS VAX	31.70
DEC/EDI OFTP Package for OpenVMS VAX	31.70
DEC/EDI X.400 Package for OpenVMS VAX	31.70
DEC/EDI Filebridge Development for OpenVMS VAX	31.70
DEC/EDI Bisynchronous Package for OpenVMS Alpha	53.14
DEC/EDI OFTP Package for OpenVMS Alpha	53.14
DEC/EDI Filebridge Development for OpenVMS VAX	53.14
DEC/EDI X.400 Package for OpenVMS Alpha	53.14
DEC/EDI Cockpit for MS-Windows	31.70
DEC/EDI Application Client for OpenVMS VAX	31.70
DEC/EDI Application Client for OpenVMS Alpha	53.14
DEC/EDI Application Client for DEC OSF/1 Alpha	53.50
DEC/EDI Application Client for IBM AIX	62.91
DEC/EDI Application Client for HP-UX	62.92

ObjectBroker

ENTERPRISES WITHOUT BARRIERS

ObjectBroker enables developers to employ an OO paradigm to easily integrate independently-developed applications across heterogeneous environments, facilitate the transition to client/server computing and reduce the cost of developing new client/server applications.

- ◆ 100% compliance with the CORBA standard.
- ◆ Distributed networked Microsoft OLE and DDE functionality incorporated.
- ◆ Expanded coverage to an industry-leading 11 platforms.

ObjectBroker is Digital's Object Request Broker, complying with the Object Management Group's CORBA specification, the standard for central communication and integration of software objects. ObjectBroker is middleware software technology that is specifically designed to help you integrate existing legacy and future applications, extend existing applications to new hardware platforms, and integrate products within dynamic frameworks. With ObjectBroker, the barriers between disparate computing environments effectively disappear.

Faster access, lower costs

With ObjectBroker, legacy applications can be integrated into a heterogeneous client/server arena without source-code changes. The developer is shielded from details of operating system, network layer, and platform-specific commands. And once registered, an application is universally accessible by all clients on all platforms.

ObjectBroker can bring lower development and maintenance costs, too. Users can add and dynamically re-use applications without needing to recompile or re-link. And, by using ObjectBroker as a means for exchanging requests, clients and servers are shielded from changes in underlying network topology. Changes in implementation of client or server codes are also isolated through use of the message brokering paradigm.

Across platforms, across the enterprise

ObjectBroker delivers industry-leading platform coverage with consistent standards-based APIs on all key platforms: OpenVMS VAX, OpenVMS Alpha, ULTRIX, SunOS, MS-Windows, IBM AIX, HP-UX, Macintosh System 7, OSF/1 Alpha, Windows NT Intel, and Windows NT Alpha on DECnet, TCP/IP and PATHWORKS.

Digital is committed to the CORBA standard. Currently, ObjectBroker is 100% in line with the Object Management Group's (OMG) Common Object Request Broker Architecture (CORBA) specification V1.1 and provides both dynamic and static interfaces for greater user flexibility.

Bringing down the PC barrier

ObjectBroker's DDE/OLE interfaces allow users to extend applications built around these Microsoft standards across a heterogeneous network.

ObjectBroker offers full client/server support on Windows NT. NT applications are treated as true peers. And, if you're looking to standardise fully on Windows, ObjectBroker will be a real asset in creating distributed client/server applications.

ObjectBroker for Microsoft Windows includes Dynamic Link Libraries which provide a time-saving interface to facilitate Visual Basic application development.

Product Name	SPD
ObjectBroker For Windows NT	50.73
ObjectBroker for Macintosh	44.16
ObjectBroker for Microsoft Windows	37.76
ObjectBroker for OpenVMS	44.12
ObjectBroker for UNIX	47.07

DECmessageQ

THE INDUSTRY LEADER IN MESSAGE-QUEUING TECHNOLOGY

Application developers need a process-to-process communication technology that is fast, asynchronous, and recoverable. Digital's DECmessageQ is the industry leader in message-queuing technology, and has been production-proven in mission-critical applications in the manufacturing, process control, telecommunications, financial, and defence industries.

- ◆ New! UNIX and Windows NT server products.
- ◆ New robust, small-footprint MS-Windows client product.
- ◆ Message recovery now implemented on all server platforms (UNIX, Windows NT, Macintosh and OpenVMS).

DECmessageQ enables developers to save time and money when building and integrating modular, distributed applications on heterogeneous and multi-vendor platforms, reducing time-to-market for software development. It also enables you to protect your current investment in computing platforms and software applications as you implement your future computing strategies.

Highlights of DECmessageQ include:

- Broadest platform support in the industry.
- Network transports support for TCP/IP, DECnet, and LU6.2.
- A simple set of calls (API), common to all platforms.
- High performance — thousands of messages per second.
- Interoperability with IBM MVS/CICS and IBM MVS/IMS using APPC LU6.2 message conversations.
- Non-blocking, asynchronous communication for time-independent processing.
- Robust development and management tools.

New features

V3.0 releases add server support for new platforms (DEC OSF/1, IBM AIX, Sun Solaris, HP RISC, Windows NT), a high performance TCP/IP client for MS-Windows, and recoverable messaging for all platforms, including UNIX and PC DECmessageQ Server implementations.

DECmessageQ has full implementations on all the significant open platforms for

UNIX, PCs and OpenVMS, including all three operating systems than run on the high-performance Alpha platform — DEC OSF/1, Windows NT and OpenVMS.

The DECmessageQ for MS-Windows Client implementation provides robust Windows features, such as support for DLLs, Visual Basic and WinSockets over multiple TCP/IP stacks. It includes recoverable messaging that is especially important to portable and mobile PCs that have intermittent network connections. This product has been validated with the RoamAbout Transport TCP/IP product set.

Product Name	SPD
DECmessageQ for OpenVMS VAX	34.07
DECmessageQ for OpenVMS for Alpha	46.25
DECmessageQ for UNIX (all platforms)	39.25
DECmessageQ for Windows NT	47.90
DECmessageQ for Macintosh server	53.34
DECmessageQ for MS Windows client	53.35
DECmessageQ for Macintosh client	39.26
DECmessageQ for MS-DOS client	34.06
DECmessageQ for OS/2 client	34.09

DCE for DEC OSF/1 and OpenVMS

DIGITAL'S DISTRIBUTED COMPUTING ENVIRONMENT

As many organisations move to multi-vendor systems to solve specific business problems, they are often confronted with information 'islands' that cannot easily be accessed due to different operating systems, networking protocols, and programming conventions. Application programmers are forced to code to the different sets of interfaces supported on each computer. System managers face the continuous task of managing and administering this variety of disparate systems, applications and users. And user productivity suffers from inaccessible data.

Digital's solution is the powerful Digital Distributed Computing Environment (DCE):

- ◆ An implementation of the distributed computing functionality specified by the Open Software Foundation (OSF) for OpenVMS and DEC OSF/1. (Digital was a primary provider of DCE technology to the Open Software Foundation.)
- ◆ A comprehensive, integrated set of services and tools that support the creation, use, and maintenance of client-server applications in heterogeneous, multi-vendor environments.

Simpler development in heterogeneous environments

Digital's DCE provides an 'open' infrastructure for client/server applications. It allows programmers and administrators to develop and manage distributed applications that inter-operate seamlessly in multi-vendor environments as easily as traditional, single-system programs. The DCE insulates the programmer from the underlying hardware, operating system and network transports, providing a consistent, standardised, easy-to-use programming environment for building client/server applications.

Application programmers can now design and build a client-server application that runs over a variety of operating systems and networks. Programmers simply code to the DCE Remote Procedure Call using a set of standardised APIs to reap the benefits of all the underlying DCE components. The DCE also hides the complexities and differences between the underlying network, operating systems and hardware platforms. The programmer no longer needs to be concerned with data types or networking schemes... the DCE makes those network elements transparent and helps make multi-vendor interoperability and application portability a reality.

For users, the DCE product family simply means the ability to share information naturally, where and when they need it, regardless of system type and network protocol. Digital's DCE is available *today* on virtually every major industry platform.

New features in DCE for DEC OSF/1

In addition to the base capabilities specified by the Open Software Foundation, the DCE for DEC OSF/1 product family now includes several enhancements to the standard DCE offering:

- Support for DECnet/OSI for increased connectivity;
- DCE Security Server Replication for added integrity of the client/server environment and support for the General Security Services API (GSSAPI), which enables any application to use DCE security;
- Distributed Time Services support for both DECnet/OSI and DCE RPC, for simplified management;
- X.500 for communication between DCE Cells, giving increased scalability and flexibility;
- Easier system management, through simplified installation and configuration and a namespace browser;
- Single network-wide login for enhanced security and simplified access.

New features in DCE for OpenVMS

The DCE for OpenVMS product family provides complete core runtime and development capabilities, enabling application development and deployment in a multi-vendor, heterogeneous environment. DCE for OpenVMS provides the following OSF DCE technologies: Remote Procedure Call, DCE Threads, the Distributed Time Service (DTS), client support for both the Cell Directory Service (CDS) and the DCE Security Service. These products enable customers to run any DCE-based application on OpenVMS systems — both DCE application clients and DCE application servers. This version of the DCE for OpenVMS product family also extends DCE support to OpenVMS on Alpha for the first time. And now, the right to use the DCE Runtime Services is included with the OpenVMS licence at no additional cost!

Product Name	SPD
Digital Distributed Computing Environment (DCE) Starter Kit for DEC OSF/1	38.74
Digital Distributed Computing Environment (DCE) Starter Kit for ULTRIX	38.72
Digital Distributed Computing Environment (DCE) for Windows	53.43
Digital Distributed Computing Environment (DCE) for DEC OSF/1	43.06

Personal Computer Networking

PATHWORKS MAKES YOUR PCS PART OF THE BIG PICTURE

The personal computers in your organisation are becoming an increasingly important part of the enterprise's computing picture. Today's PCs are usually connected to a Local Area Network (LAN) to enhance their productivity and capabilities — using networking solutions such as Novell's NetWare, Microsoft's LAN Manager and Apple's AppleShare. Such PC networks can grow, but only up to a point: to turn your PCs and PC networks into full participants in your enterprise-wide strategy, and to give PC users access to enterprise data and applications that are dispersed across different computing platforms, networks and geographical boundaries, you need the outstanding integration power of Digital's PATHWORKS software.

- ◆ A family of software products that provide networking and integration for users of Windows, DOS, Macintosh, Windows NT and OS/2 personal computers.
- ◆ Incorporates the leading PC network operating system technologies — NetWare, LAN Manager, AppleShare — and extends their functionality far beyond basic file and print services... for example, multi-vendor management, multiple protocol support, terminal emulation, X windows display services, e-mail, ObjectBroker and Distributed Computing Environment.
- ◆ Enables PC users to access data and resources on PATHWORKS, NetWare, LAN Manager and AppleShare networks, all at the same time, on virtually any server, workstation or mainframe host on your enterprise network.
- ◆ A choice of client- or server-based licensing ensures the best fit for your organisation's computing profile, users and budget.

Much more than a PC network operating system

Digital has already licensed millions of personal computers on PATHWORKS networks. What has made so many organisations choose PATHWORKS, when there are already a number of very popular PC network operating systems? The answer is that PATHWORKS is not just another PC network operating system (NOS). It's networking without limitations: you aren't restricted to a single kind of server, a single NOS, or to a local-area network when your users are crying out for enterprise-wide access. It provides much more than just basic file and print services: it adds applications, additional transports (network

protocols) and utilities that enable your PC users to connect to, access and exchange data with virtually any computer in your enterprise network — from other PCs on previously 'unreachable' LANs to UNIX workstations, minis and mainframes.

Digital's strategy for PC integration is to add value to existing Network Operating System (NOS) technologies, and to existing PC LANs, by means of extended NOS services that provide information integration. In short, your PCs and PC LANs stop being islands within the enterprise: PATHWORKS builds, easily and transparently, the bridges required to make them integrate seamlessly into the larger client/server enterprise environment. In turn, that means you have the freedom to choose the right desktop computer for each user, without having to worry about compatibility or connectivity issues.

Based on industry standards

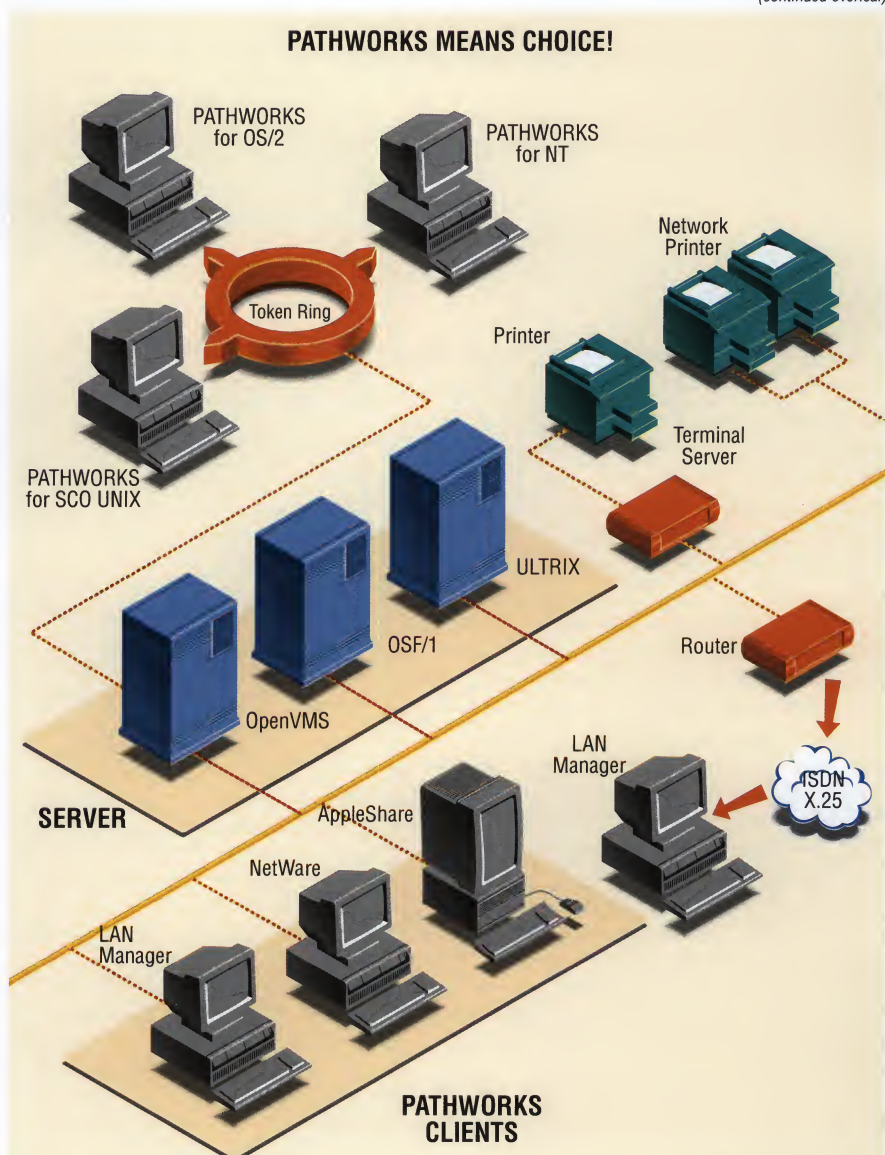
Digital's leadership and experience in networking shows up clearly in PATHWORKS. The extensible multi-protocol architecture, together with Digital's on-going business and technology agreements with key vendors like Microsoft, Apple, Novell, 3Com, Lotus and Borland, ensure that PATHWORKS supports all the most popular technologies.

PATHWORKS: Building on success

With millions of users, a successful track record and a history of prestigious awards, PATHWORKS delivers the next-generation PC network operating system technology. More than ever before, it's time you connected with PATHWORKS.

PATHWORKS lets you inter-operate with other PC LANs: for example, a Windows PC user can — with an NDIS or ODI-compliant network interface card — access

(continued overleaf)



Personal Computer Networking *(continued)*

information and resources on PATHWORKS, Novell and Microsoft network operating systems... all at the same time. Here are examples of situations in which PATHWORKS is the right answer:

1) You have PCs, but no PC networking:

Perhaps you've decided that you'd like to integrate your DOS or Windows PCs into one or more LANs, and have been considering Microsoft's LAN Manager or Novell's NetWare. By choosing PATHWORKS instead, you can get the file and print services of either LAN Manager or NetWare — with full compatibility with all applications designed to use these network operating systems — plus all the additional connectivity and management capabilities offered by PATHWORKS.

2) You already have native LAN Manager and/or NetWare file and print services:

In these cases, adding PATHWORKS gives you extended management facilities, e-mail, terminal emulation, Mosaic and utilities. PATHWORKS also provides the only available solution for integrating LAN Manager and NetWare networks. In addition, PATHWORKS opens up previously unreachable information assets residing on non-PC platforms: for example, data on an OpenVMS, OSF/1, OS/2 or SCO UNIX system can be made accessible to your PC community just by running the appropriate PATHWORKS products.

PATHWORKS Client or Server-based licensing

There are now two main ways to licence a PATHWORKS installation: with client-based licensing (the traditional method), or with server-based licensing.

In the vast majority of cases, client-based licensing is the simplest, most cost-effective and most versatile. You pay just once for each PC or Macintosh to be connected, irrespective of how many servers and services are used. Your users get guaranteed access to their server systems of choice, regardless of where a server may be on the network. One client licence needs to be bought for each Client that wishes to use PATHWORKS client and/or server software.

In a few cases — for example, where DOS and Windows users with retail LAN Manager or NetWare products only ever want to access a named server — server-based licensing may prove to be the right answer. This type of licence enables a specified server to offer access to a specified number of retail NOS users on a first-come, first-served basis.

A PATHWORKS licence is specified as a licence for a single version of the software used. To ensure that you benefit from the latest versions, immediate subscription to the MDDS and SUSL services is highly recommended (No rights to update are included with the licence).

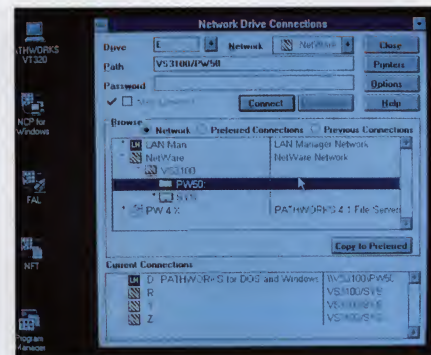
PATHWORKS has a licence management facility (LMF) to help you manage your PATHWORKS DOS and Windows-based PCs from your OpenVMS or OSF/1 server through the use of Product Authorisation Keys (PAKs).

PATHWORKS is based on Open Client/Server

With PATHWORKS client software installed on your PCs, and PATHWORKS server software installed on any combination of OS/2, UNIX, Windows NT or OpenVMS servers, your PC users can use familiar DOS or Microsoft Windows commands to share resources and exchange information with one another — and with OS/2, Macintosh, UNIX and OpenVMS system users — anywhere on the local or wide-area network. Users will be able to access applications, information, system and network resources anywhere in the organisation.

Highlights of PATHWORKS include:

- Full support for both LAN Manager and NetWare technology, and for Microsoft Windows 3.1.
- A windowing user interface that makes it easy to browse through, connect to and disconnect from network services on any network based on LAN Manager or NetWare.
- Easy-to-use installation, configuration and upgrade utilities.
- Powerful, multi-vendor network management application: ManageWorks. This graphically-driven tool lets you add and remove network users and resources, configure servers and clients remotely, manage NetWare and LAN Manager servers remotely, and establish security.
- Small and fast TCP/IP network transport with a full set of network utilities (FTP, Telnet, PING, ARP, NETSTAT and NetBIOS) is included in the basic client along with transports and utilities for DECnet, NetBEUI, IPX, LAT and LAST.
- LAN support for Ethernet, Token Ring or FDDI.
- Support for asynchronous point-to-point communications through asynchronous TCP/IP and asynchronous DECnet; support for synchronous communications over X.25 and for ISDN (using X.25) for single, remote access to enterprise-wide networks.
- Support for latest driver standards for network interface cards: NDIS V2.0.1;



PATHWORKS makes it easy to access and use LAN Manager or NetWare network services.

ODI Rev. A; DLC V1.2, V1.3; and native drivers for Digital's EtherWORKS cards.

- Multiple, simultaneous transport support for DECnet/OSI, TCP/IP NetBEUI, IPX, LAT and LAST.
- Remote boot via RPL and MOP protocols.
- Mail clients that provide a text editor, binary file attachments, distribution list and organisational folders.
- PC DECwindows Motif, a DOS based X Windows system server.
- VT320 terminal emulation for both DOS and Windows.
- Support for InfoServer CD-ROM drives.
- Full programming support through a consistent set of PATHWORKS APIs. NetBIOS for NetBEUI, IPX, TCP/IP, DECnet. IOCB for TCP/IP, DECnet. Socket library for TCP/IP, DECnet. WINSOCK support for TCP/IP, DECnet.
- Internet access via PATHWORKS Mosaic, providing access to the World Wide Web (WWW).

Flexible Licensing

Clients can be licensed in the following ways:

1. Combination Client Server (CCS) licences for LAN Manager and NetWare give the greatest combination of functionality and flexibility. These licences permit your PC to use the PATHWORKS transports, applications and management capabilities; they also allow your PC to use all PATHWORKS (LAN Manager) or PATHWORKS (NetWare) services. (Client based licensing)
2. Client Network Services (CNS) licence. This is appropriate for customers who only need the PATHWORKS transports, applications or management capabilities, but will not need to access PATHWORKS file servers. (Client based licensing)

PATHWORKS for Macintosh Client Software

Developed jointly by Digital and Apple, PATHWORKS for Macintosh enables Macintosh computers to work with PATHWORKS on an OpenVMS server, or with PACER on an ULTRIX/RISC server, giving your Mac users transparent access to local and remote information and resources. The client software takes full advantage of the Mac's ease of use, with network resources appearing to the user simply as an extension of the Mac's desktop environment. For example, users access file and print services from the Mac's familiar Chooser desk accessory.

PATHWORKS for Windows NT Software

With PATHWORKS for Windows NT software, users of Microsoft's Windows NT operating system on Intel, Alpha and RISC systems can now have easy access to network resources, anywhere in the organisation. Highlights include:

- DECnet support for Token Ring Ethernet, FDDI and Async.
- Fully licensed access to services on PATHWORKS servers.
- Full support for providing LAN Manager file and print services over DECnet on a Windows NT server or Advanced Server System.
- Programming libraries for WINSOCK, PWSOCKLIB, DNETLIB and XTI for developers to write and port custom applications.
- Seamless integration of DECnet network management support with Windows NT management.
- Easy-to-use installation and configuration utilities.

PATHWORKS for OS/2 Software

Users of PCs running Microsoft's OS/2 operating system V1.3 can use their familiar System Manager interface to gain and offer easy access to network resources throughout the organisation.

- Multiple, simultaneous transport support for DECnet/OSI, TCP/IP and NetBEUI (TCP/IP is an add-on product).
- Includes a mail client that provides a text editor, and the ability to handle binary file attachments, real-time mail notification, distribution list and organisational folders.
- VT320 terminal emulation.
- Microsoft OS/2 V1.3 support.
- LAN Manager 2.0/2.1 file and print services.
- DECnet for OS/2.
- Mail server.
- Can provide all the features of a client and server on the same system.



ManageWORKS gives you powerful, multi-vendor network management driven by a graphical user interface.

PATHWORKS Servers

The main products in the server family are:

- PATHWORKS for OpenVMS (LAN Manager).
- PATHWORKS for DEC OSF/1 (LAN Manager).
- PATHWORKS for OpenVMS (NetWare).
- PATHWORKS for SCO UNIX.

Flexible Licensing

Servers can be licensed in the following ways:

1. Combination Client Server (CCS) licences for each PC. (Client based licensing)
2. File and Print Server (FPS) licence enables a specified server to offer access to a specified number of retail NOS PCs on a first-come, first-served basis. (Server based licensing)
3. File and Print Access (FPA) licence enables a retail NOS PC to access all PATHWORKS (LAN Manager) or PATHWORKS (NetWare) Services. (Client based licensing)

PATHWORKS for OpenVMS Server Software

The PATHWORKS for OpenVMS (LAN Manager) server provides application, data, communication and resource-sharing services for Windows, DOS, Windows NT and OS/2 PC client systems anywhere in a local or wide-area network. The strength of

an OpenVMS server solution over PC server solutions lies in the rich data integrity, security, network and system management features of OpenVMS. PATHWORKS for OpenVMS (LAN Manager) software is available on a wide range of VAX and Alpha systems, which means that, when needed, you can 'grow' your OpenVMS server to mainframe-class performance to keep one step ahead of your PC users' performance needs. Highlights of PATHWORKS for OpenVMS server software include:

- LAN Manager V2.2 file and print services for PCs.
- A new alternative to Disk Services known as PATHWORKS DOS File System (PDFS), which allows multiple simultaneous reads and writes, wide area access, and is faster than the old disk services.
- Security and administration model accommodates both PC NOS and OpenVMS (HOST) security policies.
- Multiple, simultaneous transport support for DECnet/OSI, TCP/IP, AppleTalk, NetBEUI, IPX, LAT and LAST.
- Gives clients transparent access to IBM SNA, X.25 and other vendors' networks through gateways.
- Includes basic local- and wide-area electronic mail services.
- Supports all existing datalinks on the

(continued overleaf)

Personal Computer Networking *(continued)*

server including X.25, ISDN, HDLC and other WAN datalinks.

- Server configuration and monitoring services via an MS-Windows based application (included with the server). Collects server resource utilisation data, and provides real-time graphical data to assist in configuration.
- Increased performance using XQP+, an enhanced QIO processor.
- Enhanced cluster support: PATHWORKS cluster aliasing, load balancing, faster performance, limited automatic fail-over.
- Remote boot for LAN Manager based PCs using industry standard RPL (as well as existing MOP).

PATHWORKS OpenVMS NetWare Server software

PATHWORKS for OpenVMS (NetWare) allows an OpenVMS system to act as a file, print, mail, database and application server to NetWare clients. The fileserver is compliant with NetWare 3.11 and offers the following features:

- NetWare File and Print services;
- Security and administration using both NetWare and OpenVMS utilities;
- IPX tunnelling over DECnet;
- Electronic mail services.

PATHWORKS for DEC OSF/1 Server Software

OSF/1 is Digital's industrial-strength implementation of the UNIX operating system. By running PATHWORKS for OSF/1 server software, you can achieve application, data, communication and resource-sharing services for Windows, DOS, Windows NT and OS/2 PC client systems anywhere in a local or wide-area network, making it easy for PC users to work with other UNIX users.

PATHWORKS for OSF/1 runs on Alpha systems, giving you the ability to choose just the right size of server you need — and tremendous scalability for the future as your PC users' demands grow. PATHWORKS for OSF/1 servers can be dedicated or non-dedicated PC LAN servers, with the ability to run multi-user applications simultaneously alongside the PATHWORKS server function. Highlights of PATHWORKS for OSF/1 server software include:

- LAN Manager V2.2 file and print services for PCs are incorporated into the software.
- Inter-operates with NFS file and print service protocols.
- Security and Administration model accommodates both PC NOS (LAN Manager) and OSF/1 (HOST) security policies.
- Multiple, simultaneous transport

support for DECnet/OSI, TCP/IP, NetBEUI and LAT.

- Includes basic local and wide-area electronic mail services.
- Supports all existing Ethernet and FDDI LAN datalinks on the server.
- Remote boot using industry-standard RPL protocol.

PATHWORKS for SCO UNIX Server Software

The PATHWORKS for SCO UNIX server gives you application, data, communication and resource-sharing services for Windows, DOS, Windows NT and OS/2 PC client systems anywhere in a local or wide-area network, based on servers using low-cost Intel PC processors. Highlights of PATHWORKS for SCO UNIX server software include:

- LAN Manager V2.2 file and print services for PCs are incorporated into the software.
- LAN Manager V2.2 API support.
- Inter-operates with NFS file and print service protocols.
- NetBIOS interface for DECnet, TCP/IP and NetBEUI.
- Multiple, simultaneous transport support.
- Mail services.
- Remote Boot using RPL.

PATHWORKS for OpenVMS (Macintosh) Server Software

PATHWORKS for OpenVMS (Macintosh) software allows an OpenVMS system to act as a file, print, mail, database and application server to Macintosh computers. VAXshare file services are compliant with the Apple Filing Protocol (AFP) V2.0. Other features include:

- AppleTalk for OpenVMS.
- VAXshare file and print services.
- Database access to RDB databases using DAL or Macintosh SQL client software.
- AppleTalk-to-DECnet transport gateway.

StorageWorks PATHWORKS Desktop Backup

Until now, backing up PC hard disks has been a laborious process. This often leads to backups being deferred, with the resultant risk of data loss when things go wrong. PATHWORKS Desktop Backup software simplifies backup of DOS-based PCs by providing unattended distributed backup and restore services for PC hard disks. The software allows PC users to specify or exclude data to be backed up over a Local or Wide Area Network to tapes directly attached to OpenVMS servers. You can set a pre-determined schedule, and thanks to the friendly graphical user interface, it's very easy to use. PATHWORKS Desktop Backup supports VAX OpenVMS

servers and DOS clients (including support for Windows).

Digital's EtherWORKS 3 Turbo network cards: Fast, affordable and network-ready

Digital's PATHWORKS software works with your existing network cards, protecting your investment in hardware. However, if you're networking your PCs for the first time, it makes sense to choose Digital's EtherWORKS 3 Turbo network interface cards, because — in addition to the features listed below — Digital is offering packages which include PATHWORKS for DOS (LAN Manager AND NetWare) client at an incredibly competitive price!

- Thick, ThinWire and 10BaseT connections for ISA, EISA, MC, and PCI PCs.
- 100% compatible with all major network operating systems.
- Dynamic memory management and parallel processing for optimum performance.

Product Name	SPD
Clients	
PATHWORKS for DOS and Windows	55.07
PATHWORKS for Macintosh	31.53
PATHWORKS for Windows NT	51.56
PATHWORKS for OS/2	55.24
Servers	
PATHWORKS for DEC OSF/1 Alpha (LAN Manager)	35.10
PATHWORKS for OpenVMS (LAN Manager)	30.50
PATHWORKS for OpenVMS (NetWare)	41.47
PATHWORKS for OpenVMS (Macintosh)	35.09
PATHWORKS for SCO UNIX	42.85
Extensions	
PATHWORKS for DOS (NetWare Coexistence)	34.76
PATHWORKS X.25 for DOS and Windows	42.73
PATHWORKS Remote for DOS and Windows	45.68
PATHWORKS Software Developer's Kit	53.56

DEC TCP/IP Services for OpenVMS

ENHANCED RESOURCE SHARING BETWEEN OpenVMS AND UNIX

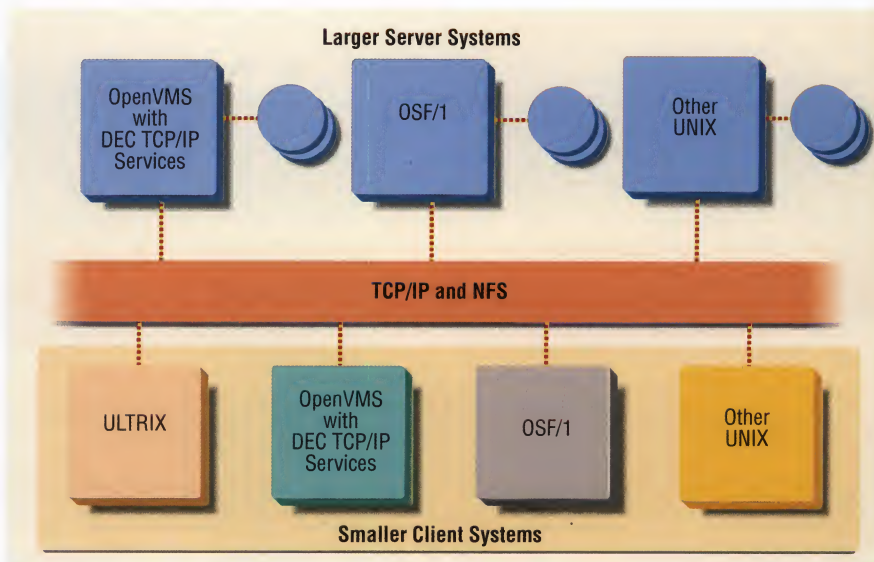
DEC TCP/IP Services delivers easy interoperability between OpenVMS, UNIX and other systems that support the TCP/IP and Network File System (NFS) networking protocols. It includes support for:

- ◆ Network file access (NFS).
- ◆ Network file transfer (FTP/TFTP).
- ◆ Network login (TELNET).
- ◆ Berkeley remote commands (rlogin, rexec, rsh).
- ◆ Remote printing (lpr, lpq, lpd).
- ◆ Mail (SMTP Simple Mail Transfer Protocol).
- ◆ Application development, including socket programming interface.

More and more users are demanding that their networks support TCP/IP and NFS protocols. This is due to the increasing use of TCP/IP-based networks, client/server applications, and to the commercial accessibility of the Internet as an inter-corporation communication highway. DEC TCP/IP enables OpenVMS machines to inter-operate in the TCP/IP environment.

Communications

Communications are implemented with the following protocols and features:



DEC TCP/IP Services gives your OpenVMS system the flexibility to work with UNIX systems.

- Transmission Control Protocol (TCP), Internet Protocol (IP), Internet Control Message Protocol (ICMP).
- Address Resolution Protocol (ARP), User Datagram Protocol (UDP), Routing Information Protocol (RIP).
- Simple Network Management Protocol (SNMP) Agent, the default standard network management over TCP/IP.

Product Name	SPD
DEC TCP/IP Services for OpenVMS Alpha	46.46
DEC TCP/IP Client for OpenVMS Alpha	46.46
DEC TCP/IP Client for OpenVMS VAX	25.A4

DECnet/OSI for OpenVMS and DEC OSF/1

OPEN NETWORKING FOR AN OPEN OPERATING SYSTEM

Many vendor networks have, at their core, a proprietary implementation. Digital, on the other hand, is placing international standards and de-facto standard networking protocols at the core of its networking strategy. The ADVANTAGE-NETWORKS product family is delivering integrated, coexistent OSI, TCP/IP and DECnet networking protocols on OpenVMS, OSF/1 and ULTRIX platforms. Digital's 18 years of experience integrating dissimilar operating systems is available to you in these products.

DECnet/OSI is Digital's implementation of the OSI network protocols for users of OpenVMS VAX, OpenVMS Alpha and DEC OSF/1 Alpha platforms. DECnet/OSI is Phase V of Digital's Networking Architecture. It provides connectivity with other Digital platforms and with any OSI conformant implementation, regardless of vendor. Highlights include:

- ◆ Integration of OSI and DECnet protocols.

- ◆ Removal of limitations on DECnet network size, by using OSI addressing.
- ◆ Preserving connectivity to PC, IBM SNA and DECnet Phase IV environments.

DECnet/OSI

DECnet/OSI is the newest version of DECnet on VAX and Alpha, and adds new capabilities. These capabilities provide an OSI End System stack and DECnet enhancements that include:

- The use of the VAX Distributed Name Service (DECdns) namespace to hold the network node names and addresses, plus the use of the Digital Distributed Time Service (DECdts).
- Phase V management of the OSI lower layers and remote Phase V systems, multi-protocol routers, and gateways.

Included in the product are capabilities required for the Government OSI Profiles (GOSIPs).

Product Name	SPD
DECnet/OSI for OpenVMS Alpha	50.45
DECnet/OSI for OpenVMS VAX	25.03
DECnet/OSI for DEC OSF/1 Alpha	41.92

IBM host communications

POWERFUL CONNECTIONS

In today's business environment, we are surrounded by an ever-increasing amount of information — and the need to move it effectively to wherever it is needed. Ideally, this should be done in a way that is simple and transparent to the users of the information, so that they can concentrate on the task in hand.

A significant proportion of Digital's customers have investments in IBM mainframe technology, and could benefit from the integration of the two computing environments. Digital has developed a broad set of products to allow such enterprises to capitalise on the strengths of both worlds. There are Digital IBM Interconnect products available on OpenVMS VAX, OpenVMS Alpha, and DEC OSF/1 Alpha: this article focuses mainly on the OSF/1 products.

OpenVMS products

The OpenVMS based Transport products are OpenVMS SNA and DECnet/SNA Gateway for Synchronous and Channel Transport.

The OpenVMS Access products can be split into four functional areas, each of which consists of a portfolio of products:

- **Access Capability 1 – Terminal Emulation:** Digital provides a range of terminal emulators: under OpenVMS and ULTRIX there are both DECwindows Motif and native emulators, and there is a native emulator for MS-DOS. All will work in conjunction with any of our gateways. Also available is DECnet/SNA OpenVMS Distributed Host Command Facility.
- **Access Capability 2 – Data Exchange and File Transfer:** Products available include DECnet/SNA OpenVMS Printer Emulator; DECnet/SNA OpenVMS Remote Job Entry; and DECnet/SNA Data Transfer Facility.
- **Access Capability 3 – Mail:** Please see the MAILbus pages in this catalogue for available products.
- **Access Capability 4 – Database and Programming Interfaces:** Please see the ACCESSWORKS/DBI pages in this catalogue for available products. Also available: DECnet/SNA OpenVMS Application Programming Interface.

DEC OSF/1 Alpha based products

DEC SNA PEER SERVER AND IBM INTERCONNECT ACCESS

Digital is now offering DEC SNA Peer Server V1.1 and a family of access routines for application access, information exchange and program-to-program communication between DEC OSF/1 Alpha systems and

Transport Selection Guide

Features	
Single PU Emulated	
Multiple PU Emulated	
Multiple Physical Links	
Active Sessions	
Protocols	SDLC QLLC Channel
Speed & Lines	
Supported Platforms	

Transport (PU Type 2)			
VMS SNA	DECnet/SNA Gateway SP	DECnet/SNA Gateway ST	DECnet/SNA Gateway CT
✓	✓		
		✓	✓
		✓	
16-64	32	128	1020
✓	✓	✓	
✓			✓ Byteblock or selector
1x<64K	1x<19-2K	1x<256K or 2x<128K or 4x<64K	Direct Channel Speed
VMS	VMS & ULTRIX	VMS & ULTRIX	VMS & ULTRIX

IBM SNA mainframe environments. Briefly, the products are:

• DEC SNA Peer Server

This is a layered product offering peer connectivity between IBM and Digital networks based on the SNA Node Type 2.1 (APPN LEN Node) protocols. It can be installed on Alpha workstations or servers running the DEC OSF/1 operating system, providing support for synchronous communications. The V1.1 release adds token ring support using the DEC TRNcontroller 700 token ring interface card (DETRA) and X.25 (QLLC) support. With the interface card, the Peer Server supports both 4 and 16 Mbps data transfer rates using LLC2 protocols and can inter-operate with any industry compatible token ring network, including IBM systems such as 37xx Front End Processors, AS/400, 3172 Interconnect Controllers, RS/6000, 3174 Establishment Controllers, and PS/2. With X.25 for DEC OSF/1 support, the Peer Server can connect to X.25 Packet Switched Data Networks (PSDN) either via an X.25 relay node on the same LAN (LLC2) or directly via a synchronous communications link (LAPB). Communication with the SNA node is via the QLLC (Qualified Logical Link) protocol. Both QLLC and X.25 can be managed via SNMP or DEC CMIP. The SNA Common Trace Facility is also supported.

• DEC SNA 3270 Terminal/Print Services for OSF/1

This product provides 3270 terminal emulation and printer emulation on suitably configured DEC OSF/1 Alpha systems. It supports emulation of IBM 3278/3279 terminals (LU Type 2) and IBM 3287 printers (LU Type 1, LU Type 3). It also supports IBM IND\$FILE file transfer.

• DEC SNA Remote Job Entry for OSF/1

This product provides batch job transfer and submission between DEC OSF/1 systems and IBM mainframe systems by emulating a 3770 RJE workstation. You can submit batch jobs to an IBM mainframe, receive job output, perform periodic updates to central-office databases automatically, and provide a file transfer facility between IBM mainframes and DEC OSF/1 systems.

• DEC SNA APPC/LU6.2 Toolkit for OSF/1

The toolkit provides an application programming interface that supports communication between an application on a DEC OSF/1 system and a co-operating application on an IBM mainframe using IBM's LU6.2 verbs. This Advanced Program to Program Communication (APPC) product consists of a library of routines linked into programs that act as Logical Unit 6.2 (LU6.2) transaction application programs. It has two components: a

toolkit required for development systems and runtime software required for all systems on which the user-developed application will run.

- **DEC SNA HLLAPI Toolkit for OSF/1**

The HLLAPI (High Level Language Application Programming Interface) product provides a 3270 data stream programming interface (LU2) between applications running on a DEC OSF/1 system and applications running on an IBM mainframe system. DEC SNA OSF/1 HLLAPI routines are linked into DEC OSF/1 applications and are compatible with IBM's HLLAPI.

- **DECwindows SNA 3270 Terminal Emulator for OSF/1**

This Motif based 3270 terminal emulator on DEC OSF/1 systems provides a DECwindows Motif style graphical user interface for 3270 terminal emulation. It is effectively a port of the ULTRIX product to the DEC OSF/1 platform, with the addition of TCP/IP

protocol and local transport support. It features copy-and-paste of text between windows to and from other DECwindows applications, and font size selection in 3270 emulation mode.

Product Name	SPD
OpenVMS SNA	27.01
DECnet/SNA MS-DOS 3270 Terminal Emulator	30.63
DECnet/SNA TOPS-20 Access Products	21.29
DECnet/SNA ULTRIX 3270 Terminal Emulator	29.88
DECnet/SNA ULTRIX 3270 Terminal/Print Services	37.12
DECnet/SNA ULTRIX Remote Job Entry	37.13
DECnet/SNA OpenVMS Distributed Host Command Facility	26.71
DECnet/SNA ULTRIX APPC/LU6.2 Tool Kit	37.14
DECnet/SNA ULTRIX HLLAPI Tool Kit	37.16

X.25-Based Services

PACKET SWITCHED NETWORK CONNECTORS

Traditionally, most data networks have made use of leased lines to connect geographically dispersed host computers. While this is cost-effective for a large amount of network traffic, there are many situations where this approach is inflexible or too expensive; often, you may need to communicate with specified machines on an irregular basis, or with quantities of traffic that do not justify the cost of such a point-to-point connection. There is also a common need to communicate with other enterprises which are not part of your organisation.

The Connection

Public Packet Switched Data Networks (PSDNs) are the computer's analogy to the telephone. Once connected to a PSDN, calls can connect to any other number on that network, or on another PSDN that is cross-connected to it (usually for international data communication). Calls can be normally or reverse-charged, and the customer pays a tariff related to time of day, number called, and the duration and amount of data.

The tariff structures vary considerably between public PSDNs, but the data charges are generally more significant than the time or distance factors.

The PSI Link

Digital's Packet System Interface (PSI) products allow suitably configured Digital systems to connect to packet-switched data networks that conform to the CCITT Recommendation X.25. (CCITT is the International Telephone and Telegraph Consultative Committee, an advisory committee established under the United Nations to recommend worldwide standards.) VAX PSI also supports International Standards 7776 and 8208, which standardise the protocols described in the CCITT recommendations.

X.25 Compatibilities

X.25 networking is now well-established worldwide for the interconnection of computer systems and terminals. It provides network users and operators with an effective way of providing multi-vendor and multi-country information transfer. Digital's range of products provides X.25 network connections which allow local and remote connection of PCs, workstations or large clusters to communicate transparently over an X.25 network.

Because many networks contain non-Digital systems, Digital fully supports the concept of co-operative computing. When X.25 is used as the data link protocol between Digital and non-Digital systems, all upper-level protocols (such as file transfer protocols) must be written by the user, or purchased separately. Digital sells a variety

Native and Connector Nodes Clients		Phase V		Phase IV	
		X.25 Gateway 100/500	DEC X.25 Native Mode ULTRIX	VAX PSI	X.25router 2000
		Connector only	Native only	Native & Connector	Connector only
Phase V	DECnet/OSI		DEC X.25 Native Mode ULTRIX is Native Mode only		
	DEC X.25 Gateway Client				
Phase IV	PSI Access VMS				
	DEC X.25 Access for ULTRIX				

X.25 product availability matrix for Phase V and Phase IV networks.

of products that achieve such multi-vendor communication, as shown in this article.

Connecting to the Packet Switched Network

Connection to a Packet Switched Data Network is either through a VAX running VAX PSI software (with an appropriate synchronous communications interface), or via an X.25router or Gateway. The X.25router and Gateways provide a dedicated X.25 access service for any DECnet host machine connected to an Ethernet — and beyond.

Once a connection has been made, other computers on the DECnet network can connect to the X.25 service using client software. There are products for OpenVMS and ULTRIX and with the migration to OSI, both DECnet/OSI as well as the traditional Phase IV products.

Digital's PSI products allow terminal communications according to CCITT recommendations X.3, X.28 and X.29. Remote terminals may access the VAX, and local terminals on the VAX may access remote computers. Extensive accounting,

network management and security features are provided to allow the network manager to maintain appropriate control of X.25 services.

Building on your X.25 investment

One of the most common uses of X.25 on Digital customer sites is to carry DECnet traffic. With the release of DECnet/OSI Phase V, DECnet now uses industry-standard Open Systems Interconnect protocols to communicate with Digital (and other manufacturers') computers both inside and outside your enterprise.

In addition, there are a variety of other products that can build on your X.25 connection investment today. These are:

- Message Router X.400 Gateway — for electronic mail and document interchange.
- DEC/EDI — for the exchange of trading information between software applications in different enterprises.
- OSAK (OSI Applications Kernel) and FTAM (file Access and Transfer) are included with DECnet/OSI for OpenVMS.

VAX PSI

The VAX Packetnet System Interface (VAX P.S.I.) software allows DECnet/OSI systems to connect to X.25 Networks conforming to the CCITT Recommendation X.25. VAX P.S.I. can be configured for either Native or Multi-host mode operation. In the latter case, the VAX P.S.I. software supports several clients running DECnet/OSI and X.25 client software, either VAX systems with DECnet/OSI for OpenVMS and P.S.I. Access software or DECnet/OSI for ULTRIX and X.25 Gateway Client software.

The DECnet/OSI End System includes the X.25 software and the licence to use the X.25 packet protocol in LAN configurations with the LLC2 data link protocol. You need, however, a VAX P.S.I. licence if you plan to use X.25 and the LAPB protocol over an X.25 WAN, or if you plan to use the VAX P.S.I. programming interface or the process-to-terminal and terminal-to-process (X.29) communication in LAN or WAN configurations.

VAX PSI Access

DECnet/OSI with P.S.I. Access (client) allows a VAX system to access a X.25 network through a connector (server) node. This X.25 connector node can be an

OpenVMS VAX system running DECnet/OSI and VAX P.S.I. configured in multi-host mode or it can be a DECNIS 500/600, an X.25 gateway 100/500 or X.25 router 2000.

The software licence for VAX P.S.I. Access is included in the DECnet/OSI for OpenVMS licence.

X.25 on OSF/1 Alpha

DEC X.25 for DEC OSF/1 enables DEC OSF/1 Alpha systems to connect to X.25 PSDNs to function as a client, native or relay node. Feature include:

- Internet (TCP-UDP/IP) communication over X.25 networks (RFC 877).
- DECnet/OSI communication over X.25 networks (CONS).
- Process-to-terminal and terminal-to-process (X.29) communication.

The DECnet/OSI End System includes a licence to use the X.25 packet protocol in LAN configurations with the LLC2 data link protocol, as well as over DEC HDLC point-to-Point links. You need a DEC X.25 for DEC OSF/1 Alpha licence if you plan to use X.25 and the LAPB protocol over an X.25 WAN, or if you plan to use the programming interface or the process-to-terminal and terminal-to-process (X.29)

communication in LAN or WAN configurations.

DEC X.25 Client for OpenVMS Alpha

DEC X.25 Client for OpenVMS Alpha Systems allows a system running DECnet for OpenVMS Alpha in a DECnet environment to connect to a PSDN via one or more X.25 connector nodes on the same Local Area Network (LAN).

Product Name	SPD
DEC X.25 Access for ULTRIX	26.E6
DEC X.25 Client for OpenVMS Alpha Systems	46.37
DEC X.25 Gateway Client for ULTRIX	32.34
DEC X.25 Native Mode for ULTRIX, 32.35.02	32.35
DEC X.25 gateway 100/500	32.97

NAS Integrated Software Products

THE COST-EFFECTIVE WAY TO BUY DIGITAL'S MIDDLEWARE

On any site which has multiple computer systems and applications, there is a need for 'middleware' software products which enable different systems to exchange information freely. Certainly, you can buy the relevant Digital middleware products one by one from the pages of this catalogue, but there's a much more cost-effective approach: Digital's NAS Integrated Software Products.

NAS offers packaged sets of Digital software products that run on selected platforms. Each set has been configured to meet the needs of different computing environments. By choosing the relevant NAS offering rather than buying the components individually, you gain important benefits:

- ◆ **Ease of purchase and installation:** With just a single part number, you can order the NAS package that's right for your organisation. And you can install the package with just one installation kit.
- ◆ **Regular and timely software updates:** NAS version upgrades are available every six months, enabling you to plan updates into a schedule.
- ◆ **Most of the software products that you buy under the NAS umbrella are based on open standards, which means that your company can use NAS to build open systems.**
- ◆ **Cost-savings:** Each NAS package is priced at much less than the sum of its parts. Savings of over 50% are often achieved.

Product Name	SPD
NAS Base Server 200 for OpenVMS VAX	36.86
NAS Base Server 200 for OpenVMS Alpha	44.54
NAS Base Server 200 for DEC OSF/1 Alpha	62.73
NAS Client 250 for OpenVMS VAX	36.89
NAS Client 250 for OpenVMS Alpha	44.57
NAS Client 250 for DEC OSF/1 Alpha	44.38
NAS Server 300 for OpenVMS VAX	36.85
NAS Server 300 for OpenVMS Alpha	44.55
NAS Server 300 for DEC OSF/1 Alpha	44.30
NAS Production Server 400 for OpenVMS VAX	40.63
NAS Production Server 400 for OpenVMS Alpha	44.56

De beste *oplossing* voor uw WANbeheer.

Het beheren van complexe, grensoverschrijdende (Client/Server)-netwerken hoeft helemaal geen zware taak te zijn. Tenminste, niet als u beschikt over POLYCENTER Manager on NetView, het belangrijkste netwerkbeheersysteem in de industrie.

Een geavanceerde grafische user interface geeft u van moment tot moment in één oogopslag overzicht van de actuele status van uw netwerk.

Voor probleemoplossingen kunt u vervolgens gebruik maken van hulpmiddelen van software-leveranciers van uw keuze. En natuurlijk biedt POLYCENTER

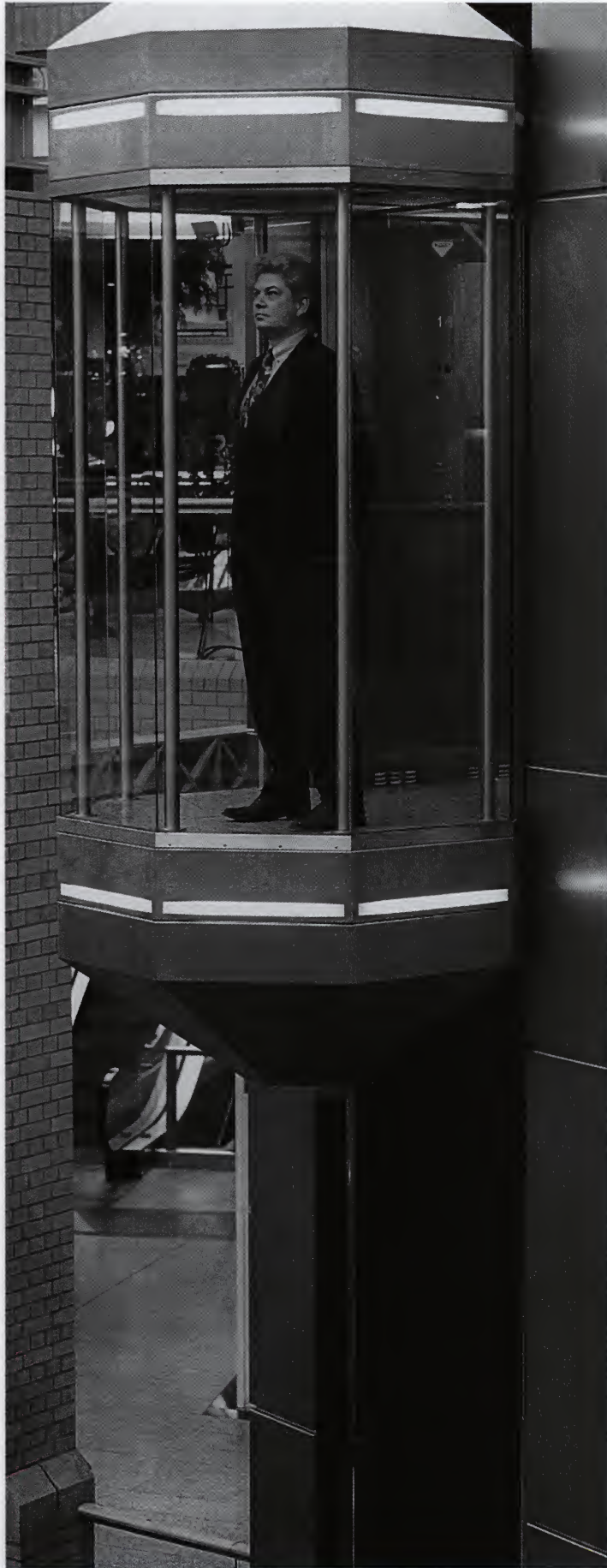
Manager on NetView u de meest geavanceerde analyse- en informatievoorzieningen. POLYCENTER Manager on NetView is geboren uit een samenwerkingsverband tussen IBM, Microsoft en Digital. Het is gebaseerd op IBM's NetView/6000, ondersteunt DEC OSF/1 (UNIX) en komt binnenkort ook beschikbaar op Windows NT en OpenVMS.

Als u uw 'global WAN' optimaal wilt kunnen beheren, ligt de keuze voor het meest gestandaardiseerde beheerplatform voor de hand. Wij vertellen u graag méér over POLYCENTER Manager on NetView.

Voor meer informatie, een demo of een lijst van geselecteerde Digital-partners belt u **030-832100** of faxt u naar **030-888094**.

Digital Equipment B.V.
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3506 GB Utrecht

digital™



ONZE POLYCENTER SOFTWARE BRENGT SYSTEEMBEHEERDERS IN DE JUISTE POSITIE.

PQR System Concepts heeft jarenlange ervaring in systeem-management. We weten daarom waar de knelpunten kunnen ontstaan in de dagelijkse informatiestroom. Voor een systeembeheerder is systeemoverzicht dé belangrijkste voorwaarde om zijn taak naar behoren te kunnen vervullen. PQR System Concepts denkt mee en biedt allerlei Polycenter software-oplossingen die u dit overzicht verschaffen en de informatiestroom reguleren en beveiligen. Toch is PQR niet alleen uw partner in Polycenter software, PQR Computer Products levert er ook alle hardware bij. Wilt u als systeembeheerder in de juiste positie komen, bel dan PQR voor meer informatie.

We zijn niet voor niets

De Digital Partner.

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PQR
SYSTEM CONCEPTS

DE DIGITAL PARTNER

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Telefoon 03406 - 22088, telefax 03406 - 65905.

POLYCENTER Manager on NetView

POLYCENTER Manager on NetView (POLYCENTER NetView) provides a comprehensive network management solution for heterogeneous multi-vendor network devices and open client/server networked environments. It includes user-oriented SNMP applications for fault, configuration and performance management, and standard application programming interfaces (APIs) that allow software developers to seamlessly integrate their multi-protocol applications.

POLYCENTER NetView incorporates the guidelines and definitions programmers need to create SNMP or CMIP applications that can work together to provide end-to-end management of enterprise information systems. Key strengths include:

- ◆ Top-rated Graphical User Interface.
- ◆ Storage and display of topology from multiple protocols.
- ◆ Robust event-handling.
- ◆ Enhanced Filtering and Thresholding capabilities.
- ◆ Common Application APIs: provides an integration point for System and Network management applications.
- ◆ DECnet support is available.

Superior graphical user interface

POLYCENTER NetView is designed for immediate productivity gains. Right out of the box, it provides results: you can view the network at a single glance to rapidly recognise and resolve network problems, and its advanced human-factors engineering ensures simple, easy-to-understand displays with excellent window management to minimise screen clutter.

POLYCENTER NetView lets you examine the network from a variety of useful viewpoints:

- Topology View — displays and manages network maps.
- Control Desk — displays and manages network events and other applications.
- Tool Palette — provides fast and easy access to most frequently used tools.
- Navigation Tree — keeps users organised as they traverse the network.

Network views may be customised based on any criteria: geography, physical or logical layout, device-type, and so forth. You can easily add customised backgrounds and icons, and context-sensitive pop up menus provide you with only those sets of commands applicable to the selected object.



Powerful monitoring tools

POLYCENTER NetView provides sophisticated monitoring information for real-time trouble diagnosis, comparison against thresholds, and historical report generation.

- Shows real-time and historical graphs of network statistics.
- Performance monitoring tools dynamically monitor POLYCENTER Manager on NetView workstation resources.
- Automated commands report problems which affect performance.
- Enhanced algorithms provide for node placement within the map and allow display up to 2000 interfaces per node.

Relational database support

POLYCENTER Manager on NetView integrates flexibly and seamlessly with relational databases such as INGRES, INFORMIX, ORACLE and Sybase. It uses the databases as a management data repository — including IP topology, SNMP-polled data and SNMP-logged trap data — with collection controlled through the graphical user interface. Using the database client/server capability, data can be placed and accessed anywhere within the enterprise.

Application Programming Interfaces (APIs)

A number of Open, industry-standard interfaces permit seamless integration of other management applications:

- End-User Interface API — enables applications to be integrated as part of the graphical display.
- SNMP API — enables applications to access MIB information.
- Event Filtering API — provides filter definitions and thresholding of event information sent to the events display, POLYCENTER NetView applications, or other registered applications.
- XMP (X/Open Management Protocol) API — provides SNMP and CMIP over TCP/IP (CMOT) support based on OSF DME technology; provides an object-oriented API to accommodate your specific needs.

Dynamic Network Discovery

POLYCENTER NetView automatically discovers, maps and monitors TCP/IP network resources. Changes are also discovered and reflected automatically on the appropriate sub-maps. Newly-discovered objects may be automatically placed on the appropriate sub-map, or optionally stored in a holding area for later manual placement.

POLYCENTER NetView's automatic topology mapping includes support for ring, bus, tree and star layouts to capture complex environments. It also allows discovery by IP address range, allowing for tailoring of auto-discovery features, and provides improved discovery, display and management of non-IP and IP resources.

Real-time administrative change capability

With POLYCENTER NetView, operational parameters may be changed in real time without disrupting ongoing data collection. Also provided is an industry-unique backup capability which automatically and dynamically provides continuous system access. This assures that network and systems downtime is kept to a minimum, with a smooth, uninterrupted turn-over to a backup network management station.

Management Information Base (MIB) Processing

POLYCENTER NetView's MIB feature set includes:

- Support for MIB-2 objects and many pre-loaded vendor extensions.
- MIB Loader allows any enterprise-specific MIB extension to be added.
- MIB Data Collector allows collection of

real-time or historical MIB information and compares data to user-defined thresholds to generate events.

- MIB Browser allows for browsing, retrieving or setting MIB values.
- MIB Application Builder allows development of applications without any programming, which includes retrieval of data, graphic or tabular display, or storing data as a file.

Open Topology Manager

The Open Topology Manager expands the scope of POLYCENTER NetView beyond SNMP by allowing the integration and correlation of multiple-protocol topologies within topology maps and event displays. Protocols such as DECnet can be integrated via the Topology Manager.

Filtering capabilities

POLYCENTER NetView helps you weed out extraneous information, providing greater control of event handling, monitoring, and reporting. Filtering criteria can be applied to event information that is displayed on the screen, or sent to applications, and the actions to be taken as a result of standard and enterprise-specific SNMP traps can be automated.

Supported by the NetView Association

POLYCENTER Manager on NetView is

supported by the joint Digital and IBM NetView Association, a joint ISV association which includes over 125 software vendors committed to developing and/or porting third-party applications for POLYCENTER Manager on NetView.

POLYCENTER Migration software packages are available to ease the transition from POLYCENTER Network Manager 200/400 and POLYCENTER SNMP Manager 100/300 to the POLYCENTER Manager on NetView for DEC OSF/1 Alpha and POLYCENTER DECnet Manager for DEC OSF/1 Alpha.

The advantages of Digital's POLYCENTER NetView solutions include:

- NetView offered on high-performance Alpha processors.
- Superior price/performance.
- A superior, intuitive and easy-to-use graphical user interface.
- Common APIs which are open and extensible.
- Broad support of third party applications.

Product Name	SPD
POLYCENTER Manager on NetView for DEC OSF/1 Alpha	53.57

HUBwatch

SIMPLE, GRAPHICAL NETWORK MANAGEMENT OF THE DECHUB FAMILY

You invested in the modular DEChub Family to gain control over your network wiring. But powerful features aren't worth much if they're hard to use. You want a friendly graphical interface and SNMP (Simple Network Management Protocol) to manage these products from anywhere on the network. You can! — with HUBwatch.

- ◆ Offers simple point-and-click commands, descriptive icons, and context-sensitive help for easy management of the DEChub Family.
- ◆ Very easy to use: Graphical screens help you quickly identify and isolate fault conditions from the hub to the port level.
- ◆ Lets you reconfigure and balance network traffic by clicking a mouse, rather than moving connections manually.

Digital's HUBwatch translates SNMP messages into pictures, making management so easy that you can access the hub's full power at the click of a mouse — right from your desk, without flicking through a manual. Only HUBwatch has the flexibility to manage multiple hubs with a single module — the SNMP-based DECagent 90 — that works both inside and outside the hub. With HUBwatch and one DECagent 90, you can manage up to four interconnected DEChub 90 units (480 repeater ports) from anywhere on your LAN.

In addition, with HUBwatch for OpenVMS VAX you can manage the DEChub 900 and DEChub modules which contain integral SNMP agents. You can balance network traffic and allocate bandwidth by switching modules in the DEChub 900 to different LAN channels. And you can do this with software by simply clicking a mouse instead of finding a hub, turning it off, and physically moving connections. You save time and money, and create a more efficient network — fast.

Less downtime, lower management costs

Network downtime is reduced because you control all hub functions, quickly and easily. You decrease network support costs because even non-technical personnel can manage the DEChubs using the simple graphical interface. And you reduce the cost of change since traffic can be switched to a different LAN using software, rather than by doing it manually.

HUBwatch provides a consistent user interface for both in-band and out-of-band access. It supports full repeater and terminal server management with statistics down to the port level. And it provides the same functionality regardless of the operating systems you use.

Product Name	SPD
HUBwatch for OSF/1 Alpha	46.65
HUBwatch for OpenVMS VAX	45.74
HUBwatch for ULTRIX	40.64
HUBwatch for Windows	37.87

POLYCENTER DECnet Manager on NetView

DECNET MANAGEMENT AND MORE FROM A DEC OSF/1 ALPHA PLATFORM

POLYCENTER Manager on NetView for DEC OSF/1 Alpha (page 56) enables you to manage IP networks; however, you cannot manage DECnet from this industry-standard product. You may also require the same DECnet management functionality as in DECmcc/MSU before migrating to the POLYCENTER NetView environment — and you may have DECnet IV, DECnet/OSI, Digital LAN Bridges/Terminal Servers and network devices that must be managed. The answer is POLYCENTER DECnet Manager on NetView:

- ◆ Expanded POLYCENTER network management portfolio includes POLYCENTER DECnet Manager layered on POLYCENTER Manager on NetView for DEC OSF/1 Alpha.
- ◆ Provides DECnet management capabilities on a DEC OSF/1 for Alpha platform.

POLYCENTER DECnet Manager is a layered application that requires (but does not include) POLYCENTER NetView. POLYCENTER NetView and POLYCENTER DECnet Manager offer superior functionality starting with this release and give users the ability to manage DECnet Phase IV, DECnet/OSI, Digital LAN Bridges, Terminal Servers and network devices. In addition, TCP/IP devices are manageable with POLYCENTER NetView today.

Management benefits

For new customers, POLYCENTER DECnet Manager offers network management applications to manage Digital's older terminal servers with RC/MOP, DECnet IV with NICE/NCP and DECnet/OSI with DNA CHIP using NCC. Additional non-network management-specific functionality, such as data collection and reference data applications, is included in POLYCENTER DECnet Manager.

Thinking of migrating? By moving to an industry-leading network management environment, users increase their productivity and gain additional capabilities not available in DECmcc/MSU.

Product Name	SPD
POLYCENTER DECnet Manager for DEC OSF/1 Alpha	62.53

POLYCENTER PathDoctor

INTERACTIVE SNMP-BASED NETWORK MANAGEMENT

POLYCENTER PathDoctor is an interactive SNMP-based network management software tool. It helps you evaluate the health and performance of IP routing paths between specified TCP/IP address pairs.

- ◆ PathDoctor V1.0 runs on DEC OSF/1 Alpha and DEC ULTRIX/RISC platforms.
- ◆ Designed for WAN and extended LAN environments that route IP network traffic through routers supporting the Simple Network Management Protocol (SNMP).
- ◆ Easy to use: provide greater insight into the operation and effectiveness of IP networks.

POLYCENTER PathDoctor graphically displays the end-to-end path between any user-specified pair of IP addresses. It provides real-time information regarding the configuration, health, and performance of the various interfaces and nodes in the path. It's a smart tool with built-in knowledge that allows it to understand and use available SNMP standard and private network management information.

PathDoctor is particularly good at determining routing problems and inefficiencies for Cisco, Wellfleet, 3Com, Proteon, Digital, and IBM routers. It identifies interfaces and nodes in the path that are having data-forwarding problems and provides a colour-coded status display.

For example, PathDoctor can identify when a Cisco router's IP module is discarding more than 1.5% of good traffic because of buffer allocation failures. Using PathDoctor's logging capability, you can log the percentage of good traffic discarded by the IP module and the corresponding values for buffer allocation failures. This log enables you to see whether the rule for discarding good incoming traffic was triggered due to an unusual spike or if the values were consistently close to the threshold value over time.

With PathDoctor, technical support can easily determine the forward and reverse paths between the two systems and uncover within minutes whether any component along that path is experiencing routing or forwarding performance problems.

POLYCENTER PathDoctor can be used stand-alone, or in conjunction with the POLYCENTER Manager on NetView for DEC OSF/1 Alpha.

Conformance to standards

POLYCENTER PathDoctor conforms to the Internet Engineering Task Force (IETF) defined framework for network management. It conforms specifically to the following IETF RFCs: RFC1157, RFC1155, RFC1213.

Product Name	SPD
POLYCENTER PathDoctor	51.29

POLYCENTER Storage Management

MANAGE AND OPTIMISE YOUR DATA STORAGE ASSETS

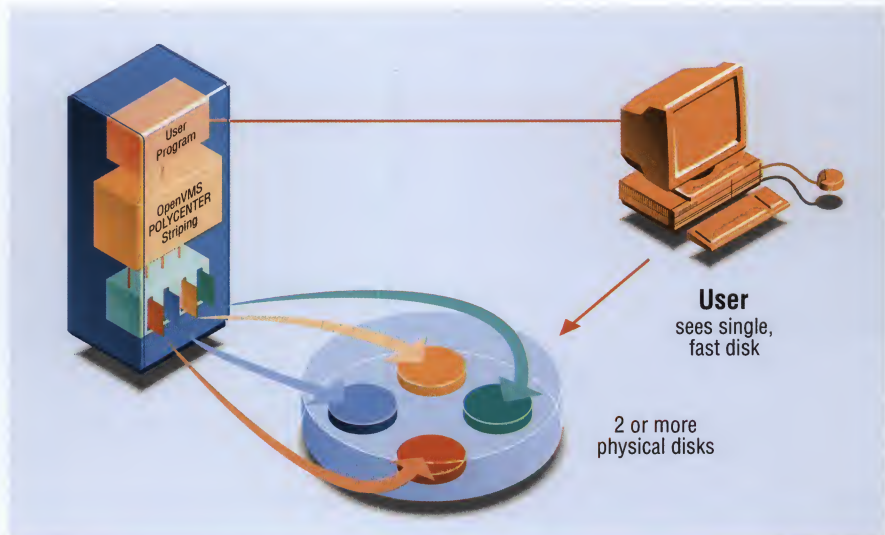
The management of data storage is a key function in the management of your organisation's overall information infrastructure. You need to optimise four key areas: security (data protection and availability), capacity, performance and cost. The POLYCENTER storage management suite includes:

For DEC OSF/1:

- ◆ ALPHA POLYCENTER Advanced File System and Utilities for OSF/1 (AdvFS).
- ◆ POLYCENTER NetWorker Save and Restore for OSF/1 (NSR).
- ◆ POLYCENTER Hierarchical Storage Management for OSF/1 (HSM).
- ◆ Logical Storage Manager for DEC OSF/1 (LSM).
- ◆ Available Server Environment for DEC OSF/1.
- ◆ PrestoServe File System Accelerator for DEC OSF/1.

For OpenVMS:

- ◆ POLYCENTER Storage Library System for OpenVMS (SLS).
- ◆ StorageWorks Desktop Backup/Archiver for OpenVMS (DTB).
- ◆ Volume Shadowing for OpenVMS.
- ◆ RMS Journaling for OpenVMS.
- ◆ POLYCENTER File Optimizer for OpenVMS (DFO).
- ◆ POLYCENTER Striping for OpenVMS.
- ◆ StorageWorks RAID Software for OpenVMS.



POLYCENTER Striping for OpenVMS.

Digital's storage management solution provides unique advantages for high availability, mission-critical applications on both UNIX and OpenVMS platforms.

DEC OSF/1: Industry-leading file system for reduced downtime

The DEC OSF/1 Alpha platform and associated Storage Management software lead the UNIX field for robustness and integration into a heterogeneous computing environment. Fast reboot, data integrity protection, and enhanced file system performance are provided in the POLYCENTER Advanced File System and Utilities. The Advanced File System, already included with DEC OSF/1 Alpha systems, will become the default file system with the DEC OSF/1 version 4 release. The Advanced File System Utilities (an optional

layered product) has been updated to include a Graphical User Interface and Domain Space balancing. These new capabilities complement powerful existing features which allow on-line re-configuration, file 'undelete', and file-level striping.

Backup and data protection for DEC OSF/1 POLYCENTER NetWorker Save and Restore provides backup and restore capabilities for today's open client/server environments and systems connected across TCP/IP. The server is available on the DEC OSF/1 Alpha platform with client support to back up all popular UNIX and PC systems. Highlights of POLYCENTER NetWorker Save and Restore include:

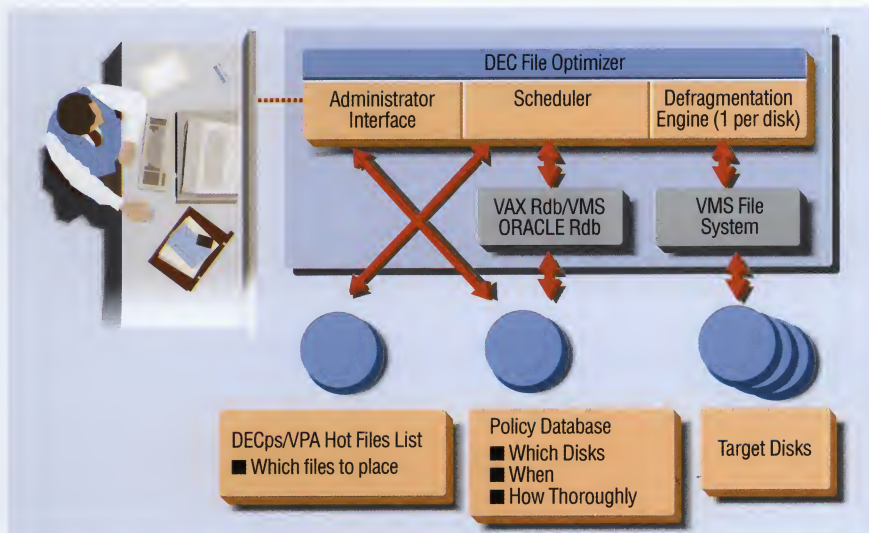
- On-line backups for mixed-vendor UNIX networks.
- Automated operation with proper system configuration.
- Easy backup/restore/browse operations.
- Data compression support.

Capacity expansion for DEC OSF/1

Digital's solutions to optimise the use of valuable storage resources by automatically and dynamically assigning data to the most efficient storage media, such as POLYCENTER Hierarchical Storage Manager on OSF/1, are enjoying growing popularity. Major new capabilities include additional processor and device support, as well as plans to support client/server migration and DLT tape devices.

General-purpose utilities for DEC OSF/1

If you need traditional volume management and re-configuration (particularly when running databases over raw partitions), Digital offers Logical Storage Manager for DEC OSF/1.



POLYCENTER File Optimizer for OpenVMS and Alpha.

(continued overleaf)

(continued from previous page)

For high availability, the **Available Server Environment (ASE)** will be supported on a broader range of platforms. ASE allows multiple CPUs to be configured using a shared storage bus (e.g. SCSI 2) and quickly moves the load to an alternate processor in the event of a processor failure.

PrestoServe provides dramatic NFS performance improvements through the use of caching to allow near-instantaneous response to applications, while changes are queued for access to media.

Backup and data protection for OpenVMS

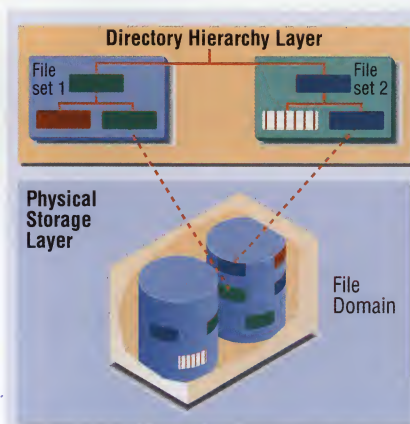
Digital's OpenVMS storage management portfolio is comprehensive, and assures the highest data availability and integrity.

Storage Library System (SLS) provides full datacentre backup, archiving and media management capabilities, and integrates with the backup utilities of OpenVMS and Oracle Rdb products:

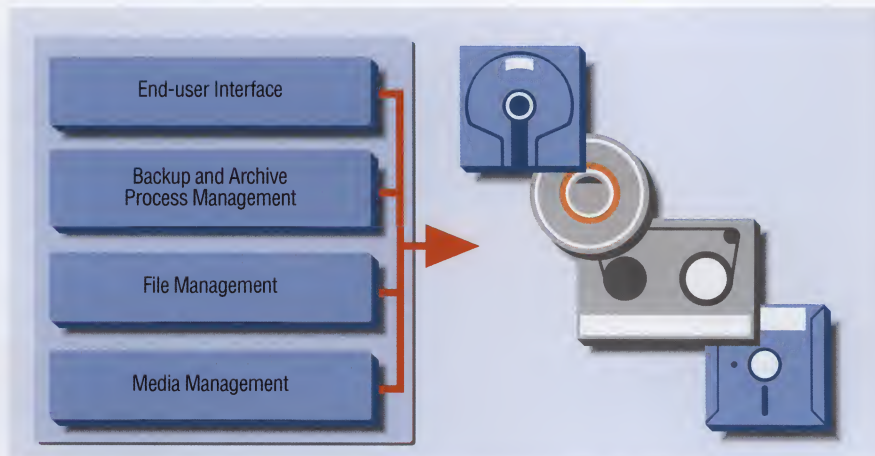
- A single OpenVMS application to manage open-reel and cartridge tapes, removable magnetic media and optical disks.
- Remote Tape Facility (RTF) allows backup operations onto remote devices, thus giving cost-savings on tape drives.
- Provides an end-user interface to facilitate file storage and recovery requests.

StorageWorks Desktop Backup/Archiver for OpenVMS provides PC backup capabilities to seamlessly integrate backup of DOS, Windows and Macintosh clients into the OpenVMS environment.

Volume Shadowing for OpenVMS VAX and OpenVMS Alpha replicates data on up to three disks, preventing data loss that can result from deterioration of media storage devices or from controller or interconnect failure. This prevents storage subsystems from becoming a single point of failure and interrupting system and



File domains can consist of multiple disks, enabling load-balancing and file-level striping.



Storage Library System for OpenVMS.

business operations. **Volume Shadowing** is an implementation of RAID 1 technology, also known as mirroring.

RMS Journaling for OpenVMS VAX and OpenVMS Alpha is an easy-to-use data integrity tool that protects data from becoming lost or inconsistent. It provides methods to undo file modifications, redo file modifications or recover a single transaction. One, two or all three journaling methods can be used in an application to protect the integrity of that application's data.

General-purpose utilities for OpenVMS

POLYCENTER File Optimizer for OpenVMS VAX and OpenVMS Alpha provides for defragmentation of magnetic media and performance optimisation.

- Reduces file fragmentation for on-line devices.
- Allows placement of files for performance optimisation.
- Can automatically use 'hot file' records from POLYCENTER Performance Solution PA to identify frequently accessed files.
- Provides VAXcluster-wide scheduling of jobs (in PLUS mode).
- Reduces backup time and improves disk utilisation.

StorageWorks RAID Software for OpenVMS provides software RAID 0 (striping) for performance enhancement, and RAID 5 for increased data protection and availability. It also provides volume partitioning to optimise configurations and integrates with Volume Shadowing for OpenVMS. StorageWorks RAID Software provides a superset of the **POLYCENTER Striping Driver for OpenVMS**, and is available on both VAX and Alpha platforms.

Product Name	SPD
POLYCENTER Advanced File System Utilities	44.52
POLYCENTER NetWorker Save and Restore NetWare Clients	51.03
POLYCENTER NetWorker Save and Restore PC and NT Clients	51.02
POLYCENTER NetWorker Save and Restore UNIX Clients	51.01
POLYCENTER Hierarchical Storage Management (HSM) Solution for DEC OSF/1	50.71
DEC OSF/1 Logical Storage Manager	51.24
Storage Library System for OpenVMS	29.67
StorageWorks Desktop Backup/Archiver Backup Server for OpenVMS	41.55
StorageWorks Desktop Backup/Archiver Backup Server for OpenVMS VAX	41.52
Volume Shadowing for OpenVMS Alpha	47.04
Volume Shadowing for OpenVMS VAX	27.29
RMS Journaling for OpenVMS Alpha	47.03
RMS Journaling for OpenVMS VAX	27.58
POLYCENTER File Optimizer for OpenVMS Alpha	55.85
POLYCENTER File Optimizer for OpenVMS VAX	36.21
POLYCENTER Striping for OpenVMS VAX	31.66
StorageWorks RAID Array 110 Manager for SUN	50.48
StorageWorks RAID Array 110 Utility for MS-DOS	45.31
StorageWorks RAID Array 110 Utility for Novell NetWare	45.33
StorageWorks RAID Array 110 Utility for SCO UNIX	45.32
StorageWorks RAID Software for OpenVMS	46.49

POLYCENTER AssetWORKS

EASY CONFIGURATION MANAGEMENT IN A MULTI-VENDOR ENVIRONMENT

Whether you're tracking your computer resources or updating configurations to match your users' changing needs, POLYCENTER AssetWORKS allows you quickly to perform the management tasks — even in a multi-vendor environment. It gives you control over your hardware and software assets, optimises your technology investment, and lets you focus on strategic resource planning.

- ◆ Automatically collects hardware and software configuration data, distributes applications and upgrades, and prints management reports.
- ◆ Enables you to track remote or local hardware and software from a central location using a single database.
- ◆ Integrates software distribution and reporting functions to quickly provide the information access and control you need.
- ◆ All functions can be performed from a single console using a Windows graphical user interface — quickly increasing your productivity.

Controlling the hidden costs of Client/Server computing

Studies of client/server computing environments suggest that as much as 76% of an organisation's software costs are attributable to distribution, administration, and support; only 24% of software costs are attributable to the direct cost of software licenses and upgrade fees.

These sizeable indirect costs often result from a lack of systematic configuration management controls and a reliance on labour-intensive tracking and distribution methods. Now, the days of manual labour are over. With POLYCENTER AssetWORKS you have an automated, cost-effective way to handle your configuration management functions from a convenient, central location.

The AssetWORKS advantage

AssetWORKS is based on the Microsoft Systems Management Server (SMS) and offers all the benefits of SMS and more. These benefits include administration capabilities at one or more sites in an enterprise network, plus remote PC maintenance and troubleshooting.

The AssetWORKS advantage is that it offers complete management reporting capabilities and supports an array of hardware and operating systems, including a variety of UNIX-based systems. These added features provide you with the comprehensive coverage you need in a multi-platform environment.

Support for a broad range of hardware and software

With AssetWORKS, you can collect information from and perform remote software installations on the following desktop systems:

- MS-DOS
- Windows
- DEC OSF/1
- Apple Macintosh
- OpenVMS
- Windows NT or OS/2
- SunOS
- AIX *
- Solaris *
- HP-UX *
- ULTRIX

* Soon to be released.

AssetWORKS also supports the following networked server environments:

- NetWare 3.x
- LAN Manager 2.x
- PATHWORKS
- Windows for Workgroups
- Windows NT Server

AssetWORKS supports LANs based on the Microsoft SMB protocol and Novell NetWare. Supported network environments also include:

- TCP/IP
- IPX/SPX
- SNA
- DECnet
- ISDN
- X.25

For example, you can track hardware and software assets, whether local or remote, from a central location using a single database. AssetWORKS automatically collects hardware and software configuration data, distributes applications and upgrades, and prints management reports. All functions can be performed from a single console using a Windows graphical user interface, quickly increasing your productivity.

With AssetWORKS, it's your computing assets that work overtime, not your inventory. Software distribution and reporting functions are completely integrated to quickly provide the information access and control you need. For example, sitting at a Windows NT station, you can drag-and-drop software packages to be installed on DEC OSF/1, Windows, SunOS, Macintosh, or MS-DOS systems (to name just a few). Then, when the upgrades are complete, you can view the updated inventory information in an easy-to-read report.

These integrated capabilities result in better resource utilisation, improved inventory management, more efficient upgrade planning, and enhanced service to your users — all of which help you do your job better, faster.

Centralised management, distributed control

You can combine centralised management of the enterprise with distributed, local control for remote branches or departments. This allows you to delegate asset-management tasks to best suit your business.

To streamline software distribution, you can create sets of target systems and/or sets of applications, then perform multiple upgrades with a single click of the mouse. This allows you to distribute standard configurations and application sets, which helps to reduce support requirements.

Upgrade planning made easy

With AssetWORKS, you no longer need to ask yourself: 'What systems do I have and how are they deployed?' or 'What software has changed and when did it change?' All the information you need is stored in a common database that is automatically updated every time your hardware or software is upgraded. No more guesswork, no more confusion, no more relying on someone's hazy memory.

You can quickly survey your system configuration data to determine what prerequisites or hardware to update before a software upgrade. This helps minimise any user downtime or inconvenience as a result of an incomplete upgrade and helps you schedule upgrades quickly and efficiently.

Flexible, comprehensive reports

You can print valuable management reports for both hardware and software assets. For example, you can quickly produce pre-formatted reports containing information sorted by system inventory, software by system, system by software, and job status.

Many other inventory and job reports are also available. All configuration data is consolidated and organised in an SQL database that gives you the reporting flexibility you need.

Asset-management services for your unique environment

As an option, you can choose from a range of Asset Management Services that provide capabilities for enhanced inventory tracking, auditing, and control of hardware and software assets. These services include asset review and management planning functions. You can choose the combination of products and services you need to design and implement the asset management system that works best for you.

Product Name

SPD

POLYCENTER AssetWORKS

53.91

ManageWorks Workgroup Administrator for Windows

MULTI-VENDOR PC LAN MANAGEMENT

Looking for a better, more affordable way to manage your PC networks? Digital's ManageWorks Workgroup Administrator for Windows is the answer. Now you can manage multiple Novell, Microsoft, IBM, and Digital PATHWORKS LANs from a single PC, using a graphical MS Windows interface. Add SNMP networking support and your favourite management applications and you've got easy, cost-effective control of your PC LANs.

Now, a single administrator can perform all the management tasks necessary to keep multiple PC LANs running smoothly, using a graphical overview of your entire LAN landscape. Through support for the Simple Network Management Protocol (SNMP) standard on TCP/IP networks, ManageWorks Workgroup Administrator even brings networking interconnect devices such as bridges, hubs, routers and switches into the picture. The result? Powerful, centralised command of your entire environment.

- ◆ Effective Windows-based management system for multiple, multi-vendor LANs: provides control and expandability at an affordable cost.
- ◆ Workgroup PC LAN management can be performed remotely from

single Windows PC, consolidating and simplifying networked PC operations.

- ◆ Enables concurrent management of multiple NetWare, LAN Manager, IBM and PATHWORKS LANs — reducing your LAN administration costs.
- ◆ Graphical user interface provides superior administrative productivity, minimises training costs.
- ◆ Support for distributed SNMP hubs, bridges, routers, switches, and PC servers gives a comprehensive networking environment overview.
- ◆ Robust support for third-party management applications ensures state-of-the-art control and expandability.

Multi-NOS management solution

ManageWorks Workgroup Administrator offers easy system management of multiple, heterogeneous networks from a single Windows PC. Using the point-and-click, drag-and-drop ManageWorks interface, you can manage major aspects of Microsoft, Novell, IBM, and Digital PATHWORKS PC networks right from your desktop. This means you can manage user accounts,

groups, file and print services, and configure LAN Manager domains and NetWare volumes and directories — from anywhere on a connected LAN network.

Rich application integration capabilities allow you to plug in third-party management products to create a full-strength network administration system. Using these complementary solutions, ManageWorks lets you audit servers, distribute and meter software, collect and maintain hardware and software inventories, perform protocol analysis, configure remote PCs, and log and track problems.

The ManageWorks console application runs on a single Windows PC connected to a LAN. Unlike many other LAN management solutions, it does not require dedicated server hardware, software, or special third-party databases. And because ManageWorks is NOS technology-independent, you are not tied to a single network operating system, nor denied interconnectivity to enterprise-level management systems such as NetView.

Product Name	SPD
ManageWorks Administrator	63.70
ManageWorks Software Developer's Kit	63.71

NetCon for ManageWorks

PC ASSET MANAGEMENT

NetCon provides the PC asset management functions every system administrator needs:

- ◆ Full control over PC hardware and software inventory — from any PC on the LAN.
- ◆ Fully integrated with ManageWorks.

ManageWorks software is the management framework tool for Digital's PATHWORKS product. The module allows system administrators to use the NetCon console from within the ManageWorks console, while also deploying the ManageWorks navigation tools and display facilities.

Total PC control

PATHWORKS for DOS and Windows client software includes ManageWorks software. This allows PC network managers to view and manage essential aspects of a network operating system directly from a remote PC through a single, advanced graphical user interface. By adding the functionality of NetCon to this environment, the PC LAN system manager can automatically generate a hardware

inventory database that contains information about RAM, CMOS, processor type, bus type, hard disk data (including disk space), ports, device drivers, TSR software, memory overview, network adapter types, plus Ethernet and station addresses.

You can also create your own database fields in NetCon. Data can be detected and collected automatically into these fields. All information is transferred to the central NetCon database. History information is saved for comparison purposes and used for troubleshooting PCs in the system.

Software inventory and licence management

NetCon also performs software inventory using an industry-standard relational database format; information about the software installed on each PC is automatically detected and collected.

Software metering information in NetCon shows concurrent use of any software product, can be summarised for groups of PCs, and can also be used to lock out users from a software product if the number of approved licences for the product is exceeded.

NetCon's user-defined configuration control centrally stores several versions of configuration files such as CONFIG.SYS, AUTOEXEC.BAT, WIN.INI, and SYSTEM.INI. It is possible to change the data in the configuration files stored in the database and transfer a new version back to the PC.

NetCon's software distribution allows automatic software distribution to an individual, a group, or all users. Forced or optional software distribution is performed by executing a script created by the PC LAN system administrator. Additional tools are provided with the system to make the creation of software distribution scripts easier.

Product Name	SPD
NetCon for ManageWorks	Ⓢ

POLYCENTER Console Manager

EASY MANAGEMENT IN A DISTRIBUTED MULTI-VENDOR ENVIRONMENT

POLYCENTER Console Manager optimises the productivity of data-centre staff by enabling them to manage, from a central point, a large number of systems and devices, regardless of where these systems and devices are located.

- ◆ OSF/Motif based interface iconically displays all systems and identifies events for response using colour-coded icons.
- ◆ User-customisable event detection, filtering and notification.
- ◆ Automatically alerts operator and/or takes corrective action as events are detected.

- ◆ Offers complete archiving of console data to simplify tracking and auditing.

Using POLYCENTER Console Manager, an operator at a single platform can monitor and control multi-vendor LAN and WAN environments. For example, the operator can boot remote systems, examine current and historic console data, and view and respond to events. The priority levels of events can be clearly identified, and a range of actions assigned to each event — from sending electronic mail or broadcasting messages, to displaying windows on remote X Window servers.

POLYCENTER Console Manager runs on DEC OSF/1 Alpha, OpenVMS VAX and Alpha, and ULTRIX/RISC platforms and can manage those platforms plus HP-UX, IBM AIX, Sun Solaris, and any other platform that has a standard console port.

With such power at the operator's disposal, POLYCENTER Console Manager naturally allows access restrictions to be specified for specific functions to ensure security.

Product Name	SPD
POLYCENTER Console Manager	42.90

POLYCENTER System Watchdog

AUTOMATIC MONITORING AND CORRECTION

The POLYCENTER System Watchdog products stand guard over your systems, anticipating computing problems before they become serious.

- ◆ Provides constant monitoring of OpenVMS and UNIX systems.
- ◆ Automatically detects changes in computing resources and notifies IS personnel.
- ◆ Initiates user-specified corrective action.
- ◆ Provides real-time diagnostic and error recovery capability.

Events ranging from hardware errors in memory, CPU or disk, to stalled printer queues and network connectivity problems can seriously reduce the effectiveness of your systems. Your business needs to detect these problems when they occur so that they can be fixed quickly. This is where POLYCENTER System Watchdog can help. POLYCENTER System Watchdog gives operators and system managers the ability to monitor potential problems on many dispersed systems at a single workstation or terminal. This enables the operations staff to become aware of potential problems quickly and correct them as early as possible.

There are two components, an Agent and a Consolidator, which together monitor areas such as networks, systems and subsystems, processes and external or user-defined events. Staff can interactively interrogate traditional system hardware and software events, plus events defined by a user application.



System Watchdog Agent

The POLYCENTER System Watchdog Agent is resident on each node being managed. It stays on the alert for local problems, runs in the background and requires no monitoring or interactive functions.

System Watchdog Consolidator

If the Agents are the distributed 'nerves', then the POLYCENTER System Watchdog Consolidator is the 'brain' bringing together the data and taking control. It displays system event information to provide views of system problems and system status.

The Consolidator has a database (called a 'profile') of systems to be monitored, and polls the POLYCENTER System Watchdog Agents on these systems at specified intervals. It can then provide real-

time control of fault management through its ability to start and stop the monitoring process at any time, and the querying of logging files.

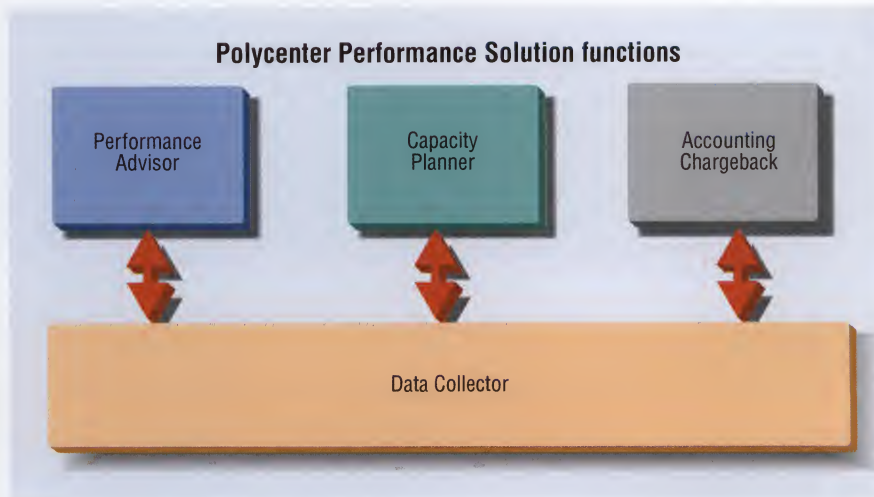
Product Name	SPD
POLYCENTER System Watchdog Agent	41.42
POLYCENTER System Watchdog Agent for OpenVMS	41.43

POLYCENTER Performance Solution

INTEGRATED SYSTEM PERFORMANCE TOOLS FOR TODAY AND THE FUTURE

POLYCENTER Performance Solution is an integrated product set which incorporates performance management and capacity planning products.

- ◆ Helps you evaluate and optimise current system resources.
- ◆ Provides automated analysis techniques and interactive modelling assistance.
- ◆ Reduces the risks in decision-making by enabling more accurate planning for growth.



POLYCENTER Performance Solution for OpenVMS

The Performance Solution suite, a component of Digital's POLYCENTER solution, is an integrated set of OpenVMS layered products designed to reduce the time and effort required to manage current as well as future system performance.

The POLYCENTER Performance Solution product set consists of:

- POLYCENTER Data Collector: Gathers and manages OpenVMS system data according to user-specified requirements. It is a prerequisite for all the other Performance Solution components and must be installed on each node.
- POLYCENTER Performance Advisor: Analyses the data that has been collected, using expert-system techniques. This analysis includes the causes of system degradation, the conditions that existed to cause the degradation, and recommendations for improving performance. POLYCENTER Performance Advisor generates reports to provide a statistical overview of actual system performance. These reports help gauge the impact of changes made to the system, or can be used to perform further analysis. Extensive graphing capabilities are provided.
- POLYCENTER Capacity Planner: The data that is collected by the Data Collector can be used to perform capacity-planning exercises. This data is used to establish a baseline model which becomes the starting point for 'what if'

scenarios. For example: 'What if I add another CPU; what if my workload increases by 50%; what if I add another storage device; what if I move a workload from one CPU to another?'

- POLYCENTER Accounting Chargeback (OpenVMS VAX only): The reports that are generated by Accounting Chargeback indicate charges for various types of system resources based upon user-defined unit prices.

Product Name	SPD
POLYCENTER Performance Solution for OpenVMS	36.02

POLYCENTER Performance Solution for UNIX

POLYCENTER Performance Solution for UNIX Systems is Digital's software for collecting and displaying performance data from distributed UNIX systems. It enables you to:

- ◆ Spot remote system disasters before they happen.
- ◆ Monitor critical OSF/1 Alpha, SunOS and ULTRIX performance statistics.
- ◆ Display graphical data in real-time, or archive for later analysis by popular tools such as Lotus 1-2-3, Excel, and PV-WAVE.
- ◆ Identify problems quickly using the Motif interface, which is faster and easier to use than standard tools such as VMstat, CPUstat, and IOstat.

The Performance Solution tool centralises the monitoring of UNIX system performance information for a network of systems. Although distributed in nature, POLYCENTER Performance Solution for UNIX Systems can be used to monitor a stand-alone workstation.

With Performance Solution, the service to your users will be enhanced as computer resources are optimised, bottlenecks are quickly identified and systems are managed proactively to avoid unnecessary problems.

Putting you in control

Performance Monitor collects UNIX statistics at an interval chosen by the user, and displays them graphically. This information includes processor time, memory and disk use, inter-process communication, process information and network activity. Users can choose from a

selection of graph styles to display results of system activity. Limits can be set on data being logged, and when the limit is exceeded the user can be automatically alerted or a script file executed.

All collected data can be stored in an archive file. A utility is provided to import the data into a spreadsheet or graphical application. Using these archives, weeks of performance data can be distilled for efficient examination. Over time, archives can be compared, allowing trends to be spotted and future needs to be anticipated.

Product Name	SPD
POLYCENTER Performance Solution for UNIX Systems	46.97

POLYCENTER Scheduler

AUTOMATIC PRODUCTION JOB MANAGER

Repetitive tasks add little to your efficiency — but a great deal to your frustration level. Digital has a distributed system management application that executes repetitive tasks automatically: POLYCENTER Scheduler.

Features include:

- ◆ DECwindows Motif user interface for real-time job control and monitoring, providing a visual display of job dependencies.
- ◆ Adapts to any company's fiscal calendar, to provide flexible job scheduling and system management.
- ◆ Remote scheduling of jobs on UNIX as well as OpenVMS systems via the LAN or WAN.
- ◆ New! Extends automation of job execution to DEC OSF/1 Alpha and Windows NT (during the first half of 1995).
- ◆ Full VAXcluster failover capabilities to ensure continued operations.

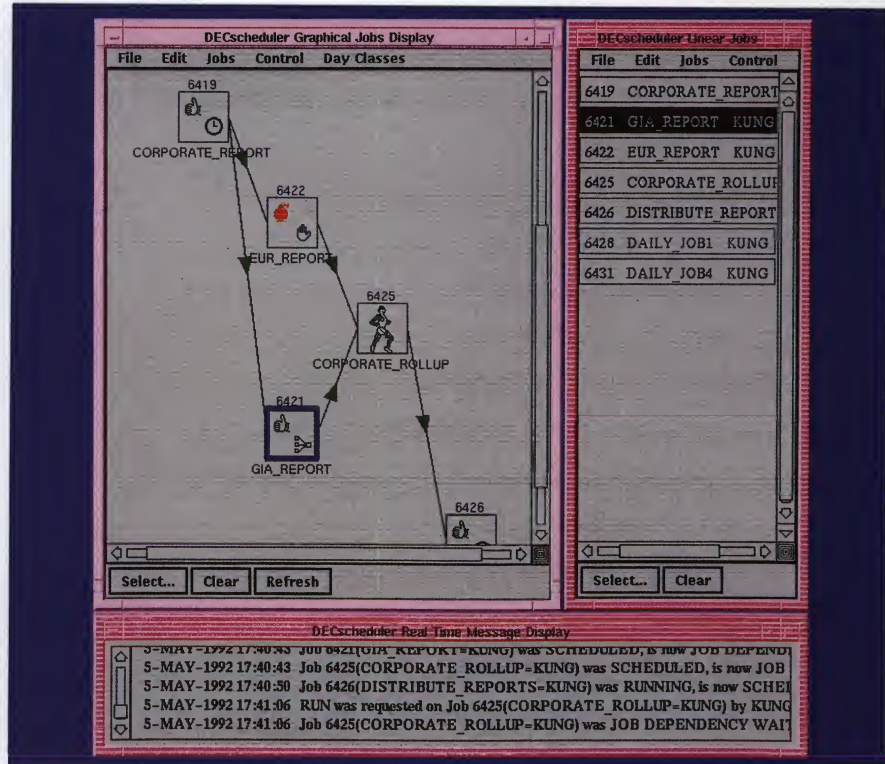
This scheduling application product automates the execution of repetitive production jobs on your OpenVMS and UNIX systems, saving you time and headaches, and increasing your productivity.

Simplifies system operation

POLYCENTER Scheduler allows for complex job scheduling with complete documentation and audit trails, resulting in substantial cost savings and better control over datacentre operations. It helps improve productivity by bringing about significant reductions in manual effort and the errors that this often introduces. Through its use of dependency scheduling, it can also help you optimise your resources by eliminating slack time between jobs.

POLYCENTER Scheduler's user interface simplifies the process of gathering information about any job. You can select jobs by name, group, or type. You can synchronise them with other jobs in your network and create virtually unlimited dependencies. Scheduled jobs execute automatically after their dependencies are satisfied. The user interface updates you on job progress, confirming which job dependencies have been satisfied and which ones remain to be completed.

With the DECwindows Motif user interface, POLYCENTER Scheduler really comes into its own. You can monitor the jobs being run at a glance, and point and click to control them in real-time.



POLYCENTER Scheduler automates the running of production jobs in a networked environment.

POLYCENTER Scheduler now offers OpenVMS Batch as an optional execution engine, allowing the choice of either a detached process or OpenVMS Batch. This feature uses OpenVMS Lock Manager to ensure reliable job tracking.

Job integrity and failover

In the event of system failure, a job may be restarted at the current step on another node in the VAXcluster. The system manager has the capability to restrict a job to run on a particular node, if necessary. Upon request, POLYCENTER Scheduler will notify you of unusual circumstances, such as a job that exceeds expected execution time or that fails to start before its deadline. Notification is sent either through VAXmail or terminal message. POLYCENTER Scheduler also provides dynamic load balancing, which can help you improve system performance.

Central control, distributed access

POLYCENTER Scheduler automatically handles time and job dependencies, even when the jobs are distributed over multiple, geographically-dispersed machines running OpenVMS or UNIX. It also manages job-rescheduling calculations and notifies the operator of job runtime status as each job progresses.

Integration with applications

POLYCENTER Scheduler's callable interface allows application developers to customise their scheduling environment without having to develop specialised software within their application code.

Product Name	SPD
POLYCENTER Scheduler Agent DEC OSF/1 Alpha	46.51
POLYCENTER Scheduler Agent ULTRIX RISC	40.84
POLYCENTER Scheduler Agent Windows NT	45.67
POLYCENTER Scheduler OpenVMS Alpha	45.52
POLYCENTER Scheduler OpenVMS VAX	32.19

POLYCENTER FullSail

INTEGRATED SYSTEM MANAGEMENT FOR UNIX

POLYCENTER FullSail (formerly DEC FullSail) is an integrated, off-the-shelf, GUI-driven, system management package for UNIX that lets users manage their computing resources more effectively and with less effort. It is ideal for distributed systems of a few to hundreds of nodes. POLYCENTER FullSail simplifies day-to-day tasks with increased capabilities for managing users, file systems, and monitoring distributed UNIX system performance.

POLYCENTER FullSail extends and complements Digital's existing storage and system administration products to reduce the cost of operations and protect critical information. These products include:

- ◆ **POLYCENTER Network Save and Restore** — for network backups of the heterogeneous environment.
- ◆ **POLYCENTER HSM** — to provide high capacity local and network storage.
- ◆ **POLYCENTER Advanced File System** — a rapid-restart, online-configurable file system.

- ◆ **POLYCENTER Performance Solution for UNIX Systems**, a tool for performance data collection and display of distributed UNIX systems.

The POLYCENTER Performance Solution for UNIX Systems is identical to the Performance Monitor component of POLYCENTER FullSail. You can either buy the Performance Monitor as a part of FullSail, or a stand-alone product called POLYCENTER Performance Solution for UNIX Systems.

POLYCENTER FullSail is launchable from POLYCENTER Manager on NetView.

Product Name	SPD
POLYCENTER FullSail	34.20
POLYCENTER HSM for OpenVMS	46.38
POLYCENTER Advanced File System Utilities	44.52
POLYCENTER Performance Solution for UNIX Systems	46.97
POLYCENTER NetWorker Save and Restore for DEC OSF/1 Alpha	50.98




DBS-Salaris



DBS-Financieel

KLEUR BEKENNEN!

Mogelijk heeft u er weinig van gemerkt: toch wordt de laatste jaren hard gewerkt aan verbetering van automatiseringsoplossingen. Met de introductie van software voor de 'multi user' Microsoft-Windows omgeving zorgt DBS Business Solutions voor een doorbraak.

Zo helpt DBS-Personeel u bij de sturing en uitvoering van uw personeelsbeleid. Planning (formatieplaatsen) en realiteit (dienstverbanden) zijn steeds helder in beeld: geen onprettige verrassingen meer; u kunt immers continu anticiperen op veranderingen. Tevens is DBS-Personeel een praktische en kleurrijke steun bij het dagelijks werk. Het pakket is uitstekend te combineren met uw eigen software, andere Windows-produkten en uiteraard met DBS-Salaris en DBS-Financieel.

De DBS Windows Solutions vormen een nieuwe generatie software. De reacties van gebruikers: "uniek, eindelijk écht gebruiksvriendelijk!" Wilt u zien hoe wij uw beleid kunnen inkleuren? U bent van harte uitgenodigd!



BUSINESS SOLUTIONS

Modemweg 20, 3821 BS Amersfoort. Telefoon 033-545111, fax 033-545199

DBS Business Solutions ontwikkelt op basis van het client/server-concept innovatieve software voor de MS-Windows omgeving. Uiteraard ondersteund door een professionele helpdesk.

DECathena

INTEGRATED, CENTRALISED SYSTEM MANAGEMENT FOR UNIX ENVIRONMENTS

DECathena provides the key capabilities administrators seek in system management software:

- ◆ Dramatic cost reductions in client/server systems administration in a UNIX or PC environment.
- ◆ Integrated and centralised approach enables a single administrator to manage up to 200 workstations.
- ◆ Unique authentication services eliminate unauthorised access.
- ◆ Multi-vendor support comprehensively protects your investment.

Client/Server model saves time and money

Based on a client/server model, DECathena software uses 'dataless' workstations networked to system servers to house user applications, data and system services. With central storage and management of all system and user files and applications, a great deal of time is saved when performing such tasks as system-wide backups, software updates and changes in user accounts.

Where a UNIX workstation environment typically requires a full-time support person for every 25 workstations, DECathena's integrated and centralised system administration approach enables the same person to manage an average of up to 200 workstations.

Eliminates unauthorised access

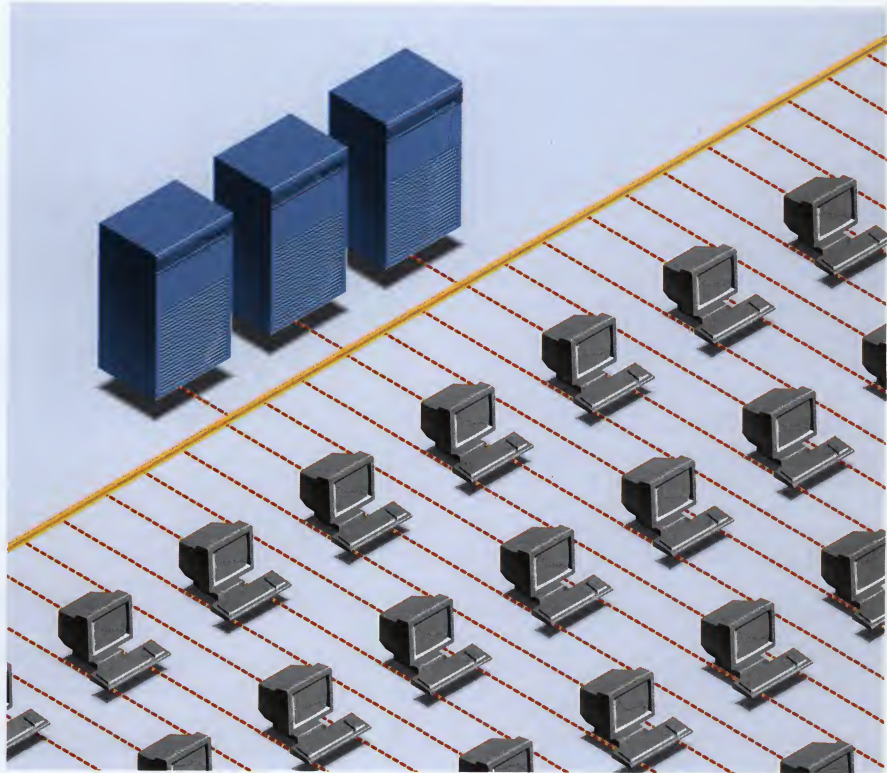
Securing a UNIX environment can be complicated and costly. Developing the right tools and processes, protecting critical information, or fixing a security breach can impact productivity and the bottom line. DECathena includes management and security of the PC environment as well as multi-vendor UNIX workstations from Digital, Sun, HP, and IBM. DECathena software provides built-in network security capabilities that use a unique authentication service to reduce the risk of computing break-ins.

Location-independent computing

With DECathena, users and system managers have full access to accounts, files, and applications from any workstation in the DECathena environment. Users can walk up to any workstation in the DECathena network, type in their user name and password, and have instant access to their personal work environment, data, and applications without any special commands. If a system goes down, there is no loss of productivity.

Multi-vendor support protects your investment

DECathena's multi-vendor support



The DECathena client/server model enables a single administrator to manage many workstations.

capabilities give users and system managers a consistent method for managing and using today's most popular systems. This includes support for the following:

- DECathena servers include Alpha systems running the DEC OSF/1 operating system, DECstation systems running the ULTRIX operating system, and Sun SPARCstations (except Moira) running SunOS.
- DECathena clients include Alpha systems running the DEC OSF/1 operating system, DECstation and VAXstation systems running the ULTRIX operating system, Sun SPARCstations running SunOS, Hewlett-Packard PA-RISC workstations running HP-UX, IBM RS/6000 systems running AIX, and PCs running MS-DOS or Windows using PC-NFS.

Software required to support these capabilities includes INGRES/SQL, a runtime licence, and PC-NFS (if used).

Easily scalable and Open

The DECathena scalable architecture lets users easily add and position computing resources where they need them. DECathena was designed from the ground up to support up to tens of thousands of users, workstations, and servers.

DECathena also provides an engineered pathway to open system standards. The

software incorporates standards such as TCP/IP and X Window System, and provides an evolutionary path to future open system standards such as the Open Software Foundation Distributed Computing Environment. It is engineered so that new standards can be immediately and easily integrated into the user's computing environment as they become available. Digital handles the integration, so users need not be concerned about obtaining a toolkit and creating the new environment themselves.

Integrated services for unparalleled capabilities

The DECathena solution incorporates a complete package of software and support services that run on Windows, UNIX and DEC OSF/1 operating systems. The software component includes naming, security, system management, file system, mail, print, notification, help desk, and conferencing capabilities. For managers, the DECathena solution provides an easily managed, economical network; for users, it provides unobtrusive access to additional services without diminishing the power and flexibility of their workstations.

Product Name	SPD
DECathena for UNIX and Windows	47.56

POLYCENTER Security Management

KEEPING TIGHT CONTROL OVER YOUR NETWORK ASSETS

With the POLYCENTER Security Family range of security tools, Digital can help you feel sure that your information asset remains confidential, accurate, and available to meet your business requirements — whether you use in-house expertise, or call upon Digital experts to roll out your security programme.

POLYCENTER Security Family is a family of software applications that a security or system manager can use to manage security analysis and reporting on a network of systems. The POLYCENTER Security family consists of:

- ◆ **POLYCENTER Compliance Manager (CM)** for OpenVMS, DEC OSF/1, ULTRIX, HP/UX, IBM/AIX, SunOS, Solaris 2 and Novell NetWare systems, for evaluating compliance of the operating system and network with specified security policy.
- ◆ **POLYCENTER Security Reporting Facility (SRF)** for OpenVMS systems, for collecting and analysing information from installed Compliance Managers.
- ◆ **POLYCENTER Intrusion Detector (ID)** for OpenVMS, DEC OSF/1, ULTRIX and SunOS, which detects, tracks and invokes counter-measures against suspicious and hostile activities.

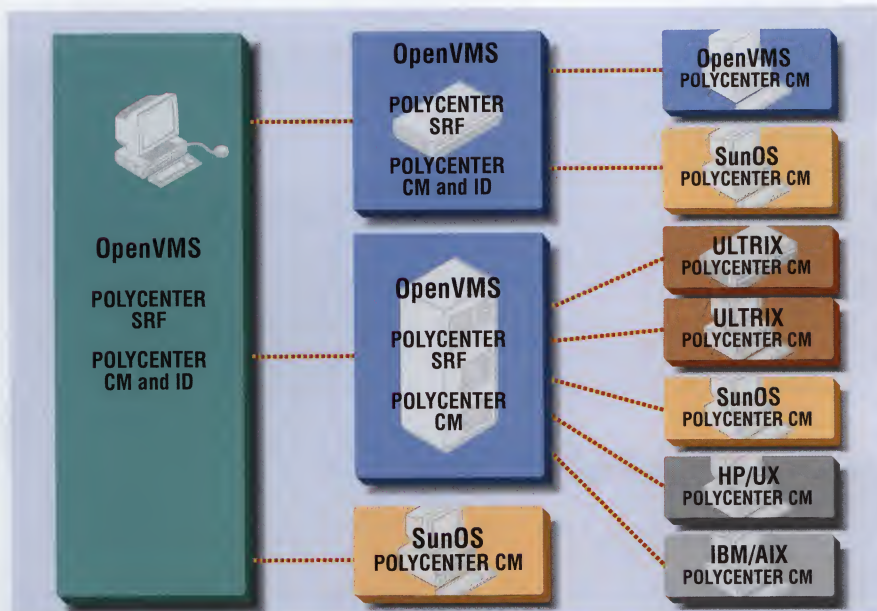
POLYCENTER Compliance Manager

POLYCENTER CM periodically evaluates compliance of the operating system and network security settings with specified security policy. Tests and parameters are selected and modified through a user-friendly menu interface. Key features include:

- Has tailorable tests to ensure security policies are consistent with your needs.
- Produces detailed and summary evaluation reports.
- Produces 'lockdown' command procedures when the system is non-compliant with security policy.

POLYCENTER Security Reporting Facility

A large network need not hamper effective, centralised security management. POLYCENTER SRF software runs on one or more OpenVMS systems to support consolidated collection, analysis, and reporting of compliance data from a network of POLYCENTER Compliance Manager (CM) installations, and optionally, POLYCENTER Intrusion Detectors.



POLYCENTER enables you to configure security compliance management to suit your needs.

The security manager can use POLYCENTER software to:

- Schedule tasks, such as producing reports, to run automatically.
- Collect security data from POLYCENTER CM and POLYCENTER Intrusion Detector clients and store it in the POLYCENTER database.
- Produce executive summary reports that list conforming systems.

POLYCENTER Intrusion Detector

POLYCENTER Intrusion Detector (ID) is a software tool that provides real-time intrusion detection through high-priority alerts sent to system or security management personnel.

- User defines what are suspicious and hostile activities.
- Uses a case method to track intrusions and thus forms a comprehensive picture of the attack.
- Invokes counter-measures including terminating the hostile process and disabling malicious user accounts.

Product Name	SPD
POLYCENTER Security Compliance Manager for AIX	46.11
POLYCENTER Security Compliance Manager for HP-UX	46.12
POLYCENTER Security Compliance Manager for NetWare	62.80
POLYCENTER Security Compliance Manager for Solaris 2	55.87
POLYCENTER Security Compliance Manager for SunOS	41.25
POLYCENTER Security Intrusion Detector for SunOS	43.09
POLYCENTER Security Compliance Manager for ULTRIX	41.26
POLYCENTER Security Compliance Manager for ULTRIX	41.26
POLYCENTER Security Intrusion Detector for ULTRIX	43.07
POLYCENTER Security Intrusion Detector for OpenVMS	41.27
POLYCENTER Security Reporting Facility for OpenVMS	26.N2
POLYCENTER Security Compliance Manager for DEC OSF/1 Alpha	55.86
POLYCENTER Security Intrusion Detector for DEC OSF/1 Alpha	43.08
POLYCENTER Security Compliance Manager for OpenVMS VAX and OpenVMS Alpha	26.N1



SOFTWARE- OPLOSSINGEN DIE UW SYSTEEM DE JUISTE LIFT GEVEN.

PQR System Concepts biedt u naast een deskundig advies, dé software-oplossingen die u het nodige systeemoverzicht verschaffen en de informatie-stroom reguleren en beveiligen.

➤ Het enorme aanbod Digital Polycenter software gecombineerd met know-how in IT-management, levert PQR net die meerwaarde op, die voor u van doorslaggevende betekenis kan zijn.

➤ Security management is bijvoorbeeld gesneden koek voor ons. De diverse programma's, bewaken en beschermen bijvoorbeeld: gebruik, toegang, privileges, besturing, commando's en uitwijkmogelijkheden in een PC-, UNIX- of Open VMS- omgeving.

➤ Onze Storage management -oplossingen lopen uiteen van volledig "unattended backup management" tot archivering. Bel PQR als u uw systeem-management naar

een hoger niveau wilt tillen. **digital**[™]
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VAX/VMS Security

Enforce your security policy effectively and efficiently with RoboSecure's 4-way assault on security problems:

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ROBO CHARGE

Resource Accounting for Today's
VAX/VMS Manager

Control your computer resources and help the bottom line by putting RoboCharge to work on these important tasks:

- Resource Accounting
- Chargeback & Invoicing
- Project Accounting
- Capacity Planning

ROBO MON

The Lights-Out Solution for VAX/
VMS Operations and Performance

Guarantee availability and performance on your system with RoboMon's comprehensive approach in all these areas:


- Automated Operations & Lights-Out Computing
- Performance Advising & Tuning
- Performance Monitoring & Capacity Planning
- Data Centre Monitoring



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OpenVMS Operating System for Alpha and VAX

UNPARALLELED POWER, RELIABILITY, SCALABILITY FOR TODAY'S BUSINESSES

OpenVMS is designed to provide the highest levels of availability and performance for customer applications which are business-critical. It is a general-purpose, multi-user operating system supporting Alpha and VAX Servers and Workstations in both development and production environments. OpenVMS can be tuned to perform well in a wide variety of applications, including compute-intensive, I/O-intensive, real-time, and combinations of those and other environments.

- ◆ Delivers data integrity, easy scaling and multi-vendor integration.
- ◆ Supported by over 10,000 partner applications.
- ◆ Alpha power and price/performance delivers the fastest, most powerful platform in the industry today, scalable beyond mainframe class.
- ◆ Supports all major open system standards, including POSIX, DGE and XPG.
- ◆ Clear growth path while maintaining compatibility with current applications and data. New functionality under development includes the log-structured file system, and full 64-bit capacity for files and databases.

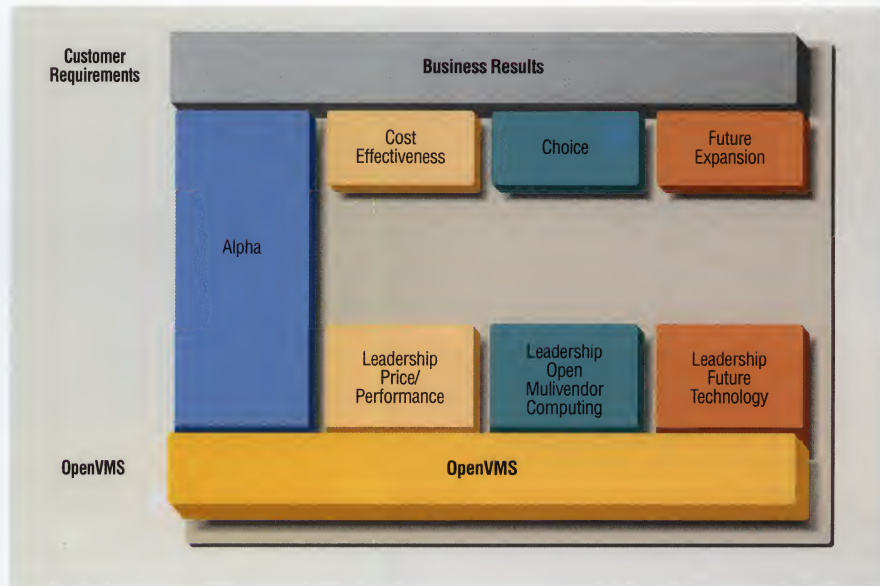
OpenVMS has well-integrated networking, distributed computing, multi-processing and windowing capabilities. It contains extensive features to promote ease of use, to improve the productivity of programmers, and to facilitate system management.

OpenVMS is an Open software environment that supports key standards such as OSF/Motif, POSIX, XPG3 and the OSF Distributed Computing Environment (DCE). The right to use POSIX for OpenVMS and the DCE Run Time Services for OpenVMS is bundled with the OpenVMS Operating System Base Licence. DECwindows Motif is available exclusively as a separate layered product.

OpenVMS VAX and OpenVMS Alpha are functionally equivalent, delivering the same software functionality independent of the underlying hardware platform.

OpenVMS: A high-integrity operating system

The OpenVMS environment includes features that make it an exceptionally robust and dependable computing environment for your most critical work. It provides a highly reliable application platform with features such as power-failure restart, batch/print restart, memory error-correction, symmetric multiprocessing (SMP) and fault-tolerant system support.



OpenVMS on Alpha offers real business benefits.

Optional software such as Cluster software, RMS Journaling, Volume Shadowing and DECams provide even higher levels of data, application, and system availability. Features such as the DECdtm Distributed Transaction Manager enable transaction and data integrity for business-critical applications.

OpenVMS: An Open operating system

The OpenVMS operating environment complies with IEEE POSIX and OSF's DCE; it is also X/Open XPG3 BASE branded. Future plans call for OpenVMS support for OSF's DME and X/Open's XPG4. OpenVMS and Digital layered products comply with more industry standards today than any other non-UNIX operating system. Those standards include OSF Motif, SQL, FIMS, the X Window System, GKS, PHIGS, and ANSI and ISO languages. Additional OpenVMS open features support:

- Compatibility with over 10,000 applications already available.
- Widespread networking support including DECnet/OSI, TCP/IP, X.25, and SNA.
- User-based licensing, normally available only for PC users.

OpenVMS: A secure operating system

C2-level security features are integrated into OpenVMS, and the operating system is currently going through the process of complete C2 certification by the US National Computer Security Center (NCSC). In addition, security features up to the B1 level can be obtained using OpenVMS Security Enhancement Services, which is also undergoing certification at the NCSC.

OpenVMS: An easily-managed operating system

OpenVMS provides a number of built-in features for system management, including basic user account, disk quota, performance, batch/print, and cluster management. Optional products from Digital's POLYCENTER solution for system and network management in a multi-vendor environment include capacity planning, asset management, scheduling, and automated operations.

OpenVMS: When business depends on it

OpenVMS is a proven, high-functionality software environment. Today, there are over 10 million users running their businesses on OpenVMS systems. Every day, OpenVMS systems process funds transactions worth more than one *trillion* US dollars. And OpenVMS servers support over a million PCs in client/server environments.

OpenVMS systems combine open standards, robust functionality, and Alpha power. They provide conformance to a broad range of open standards, proven business-critical software functionality traditionally found only on mainframe systems, and the power and price/performance of the industry's fastest RISC technology, the 64-bit Alpha micro-processor.

Product Name	SPD
OpenVMS for Alpha	41.87
OpenVMS for VAX	25.01

DEC OSF/1

THE UNIFIED, MODERN, COMPLETE UNIX

In an increasingly standards-driven computing world, DEC OSF/1 has the standards you need — now and in the future. But perhaps most significantly, DEC OSF/1 brings all these key variants and standards together on the modern Mach kernel of OSF/1.

DEC OSF/1: The modern UNIX

DEC OSF/1 is a new UNIX from the kernel outwards: a modular Mach kernel that lends itself to providing for added features and functionality easily and quickly. It runs on Digital's state-of-the-art, 64-bit Alpha hardware. And DEC OSF/1's modern, modular design means high quality, easy customisation, and advanced programming features to complement your Alpha solution.

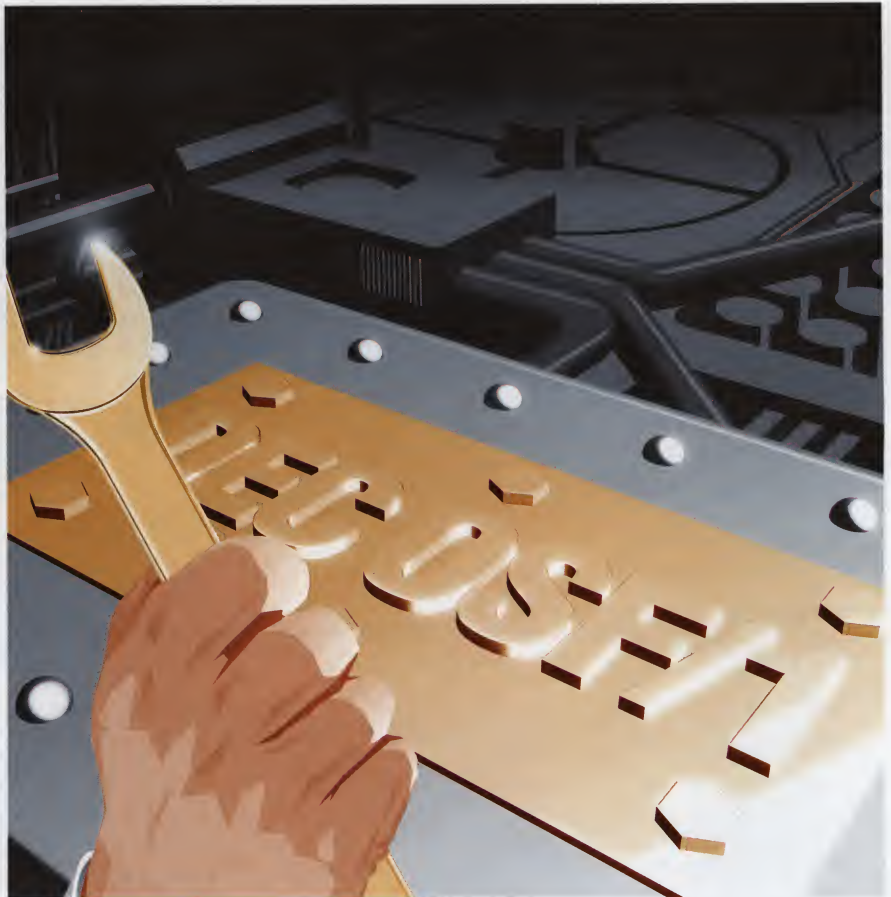
DEC OSF/1: The complete UNIX

Because DEC OSF/1 supports a very broad set of standards, porting applications and tools is easy. Customers who have standardised on full SVID 3, the Bellcore SOE or specific SVR4 features and functions, don't have to port or retrain when moving to DEC OSF/1. You not only get a modern, highly functional operating system with DEC OSF/1, but you also get a complete UNIX computing environment that will support everything you need to run and manage your computing environment.

Fast and flexible

Highlights of DEC OSF/1 include:

- **Leadership 64-bit computing.** Digital's Alpha systems, coupled with DEC OSF/1, deliver a quantum leap in addressable memory, file size and computing speed.
- **Advanced operating-system features.** DEC OSF/1 is packed with advanced features, including Shared Libraries, Threads, a Logical Volume Manager and Memory-mapped file support.
- **Commercial File System Support.** File system enhancements include the POLYCENTER Advanced File System, licensed with the DEC OSF/1 operating system at no additional charge. It provides fast system reboot, data integrity protection, and enhanced file system performance. The major file systems, UNIX File System (UFS) and Network File System (NFS) are supported; new file systems for specialised applications can be added easily. DEC OSF/1 accesses files on all of these systems through a single interface, the Virtual File System (VFS); this makes file system variations transparent.
- **Real-time is now Open.** With DEC OSF/1, real-time comes to open, standard UNIX computing to address problems only proprietary systems could solve



- before. To support real-time, DEC OSF/1 offers a host of powerful features, including a pre-emptive kernel, fixed-priority scheduling, clocks and timers, process memory locking, asynchronous I/O, semaphores and memory-sharing between processes or applications.
- **Desktop productivity boost.** DEC OSF/1 facilities share the ease of use and intuitive feel of the Motif graphical user interface. Also included are Bookreader, an on-line information access tool; a calendar for managing schedules and appointments; a cardfiler for organising information on on-line index cards; a document viewer that displays PostScript and DDIF documents exactly as they would appear when printed; DECnotepad text editor; an electronic mail facility; and a powerful visual-differences program that uses a graphical display to highlight the differences between ASCII text files.

Powerful programming tools.

DEC OSF/1 offers the programming features of both System V (SVR4) and BSD UNIX. It includes the C shell, Bourne shell, and Korn shell, and also adds a range of enhanced programming tools available with the DEC OSF/1 Developer Extension package.

State-of-the-art graphics is here!

To the rich feature-set of MIT's X11 Release 5, DEC OSF/1 adds even more capabilities: PEX 5.1 (performance boost), Adobe 1007.2 (Display PostScript), support for HX (8-plane smart frame buffer) and PXG (3D graphics), loadable X Server (for adding third-party display devices easily), shared memory extension support, and video extensions (for multimedia).

Networking: an integral part of DEC OSF/1

Not only does DEC OSF/1 offer the fastest networking available, but because it's a true native UNIX it's also the complete network environment you would expect to find in UNIX: TCP/IP, Telnet, SLIP, XTI, NTP, BIND name services, streams and sockets, and FDDI support.

Product Name	SPD
DEC OSF/1 C Developers' Extensions	44.36
DEC OSF/1 Logical Storage Manager	51.24
DEC OSF/1 Operating System	41.61
DEC OSF/1 Server Extensions	44.35
DEC OSF/1 TURBOchannel/VME Adapter Driver	48.50

Microsoft Windows NT

POWER COMPUTING ON PC-CLASS HARDWARE

Microsoft's Windows NT is a pre-emptive, multi-tasking operating system based on a 32-bit architecture. With security and networking services embedded as fundamental components within the base operating system, Windows NT is an ideal platform for implementing distributed customer solutions using PC-class hardware.

- ◆ Provides compatibility with many other operating systems, file systems, and networks.
- ◆ Runs on both complex instruction set computing (CISC) and reduced instruction set computing (RISC) processors (e.g. Alpha).
- ◆ Supports high-performance computing by providing kernel support for symmetric multiprocessing configurations.

Compatibility, portability, scalability, security

Windows NT provides support for existing file systems (including FAT and HPFS) and applications (including those written for MS-DOS, Windows 3.x, and POSIX). Network connectivity to several existing networking environments is also included.

Processor flexibility is a key asset of Windows NT. The operating system runs on both CISC and RISC processors: CISC includes computers running with Intel 80386 or higher processors, while RISC includes computers with Alpha and MIPS R4000 processors.

Unlike typical PC operating systems, Windows NT can take advantage of multi-processing hardware. It is scalable all the way up to 32 processors.

Windows NT includes a uniform security architecture that meets US Government requirements. In the corporate environment, this provides a safe, secure environment in which to run critical applications.

Reliable, robust distributed processing

Windows NT was designed with networking built into the base operating system. It allows for connectivity to a variety of host environments through its support of multiple transport protocols and high-level client-server facilities including named pipes, remote procedure calls (RPCs) and Windows Sockets.

Windows NT provides an architecture that prevents a failure in one application from affecting the performance of other applications or the operating system. Windows NT employs the robustness of structured exception handling throughout its entire architecture. It includes a



The Digital Alpha running Windows NT: The hottest operating system, on the coolest hardware.

recoverable file system and provides protection through its built-in security and advanced memory management techniques.

International and extensible

Windows NT will be offered in many countries around the world, in local languages, and supports the International Organisation for Standardisation (ISO) Unicode standard. The operating system also employs a modular design offering the flexibility of adding future modules at several levels within the operating system.

The Windows NT product family

The Windows NT family includes two members: Windows NT Workstation (previously known simply as 'Windows NT'), which is an ideal client operating system and can be used in peer-to-peer applications as well; and Windows NT Server (previously known as 'Windows NT Advanced Server'), an ideal server operating system also capable of being used in peer-to-peer applications.

Windows NT Server is designed to meet the needs of organisations with more than one server, or environments which may already have a range of different networking solutions in place and have a need to integrate data, users, and resources across the whole environment. It provides additional features such as central network management, including graphical tools to manage multiple systems, the ability to add and delete users, to change passwords and

to change directory access privileges throughout the enterprise network with a single action.

Windows NT Server's Remote Access Service (RAS) provides network and client-server connections to telecommuters, travelling executives and remote system managers over phone lines, X 25 and ISDN networks.

Windows NT Server also extends powerful fault tolerance features with disk mirroring, disk duplexing and disk striping with parity (RAID 5). It allows both Apple Macintosh and PC workstations to share the file and printer resources it controls. It is designed to be able to integrate with Novell NetWare, Banyan VINES and Microsoft networks. As a server, it scores highly in reliability by allowing each server application to be run in its own address space ensuring that if an application fails it does not bring down the whole server: users can continue to use the network resources accessed through that server.

Clustering for OpenVMS

DIGITAL'S FLEXIBLE APPROACH TO ADDING COMPUTING POWER

A cluster is a highly integrated configuration of several computers operating together as a single computer system. Cluster systems using OpenVMS running on VAX have been available for many years, but now you can also cluster Alpha systems running OpenVMS and even have mixed-architecture clusters with both VAX and Alpha!

VAXclusters using VAX systems, and VMSclusters using Alpha or a mixture of systems, allow you to add processors and disk drives as your needs dictate, maintaining your current investment in capital equipment.

All configurations have the following software features in common:

- ◆ **Shared Disk Storage.** The OpenVMS file system allows all processors in a cluster to share disk mass storage.
- ◆ **Cluster-wide batch and print queues,** accessible to any machine in the configuration. Jobs submitted to cluster-wide queues are routed to the least loaded system, balancing the batch load across the cluster members.
- ◆ **Dynamic SHOW CLUSTER utility,** displays node status, information and traffic.

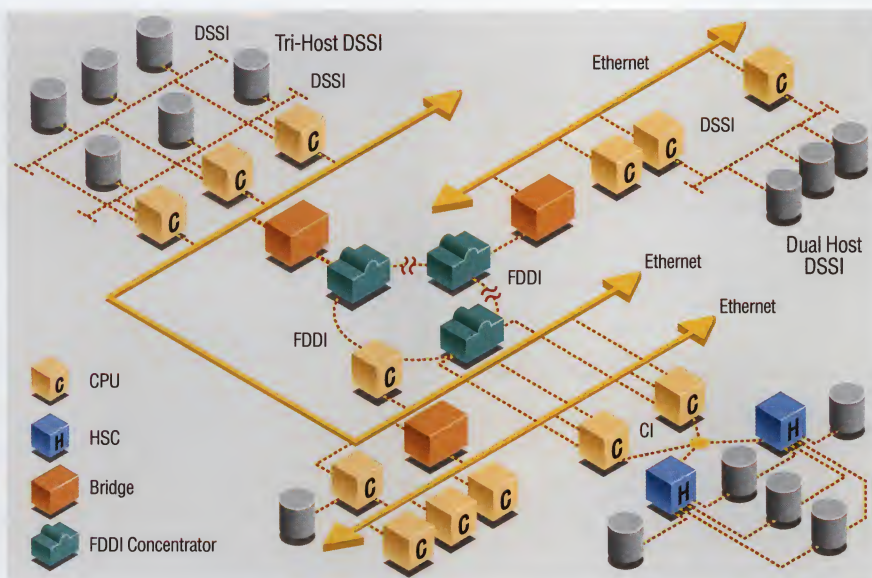
The physical connection between Alpha or VAX cluster processors can be Computer Interconnect (CI), Ethernet (Network Interconnect — NI), Digital Storage Systems Interconnect (DSSI), or Fibre Distributed Data Interface (FDDI). Please note that VMScluster booting of Alpha systems is not possible using FDDI exclusively.

FDDI has the benefit that machines in the cluster can be up to 25 miles apart, allowing an organisation to share data and resources over multiple sites. Additional benefits accrue with the use of Volume Shadowing over FDDI. Distributing member disks of a shadow set can help ensure continued access to data despite disaster or disruption at one site.

A maximum of 96 CPUs can be configured in a VAXcluster or VMScluster.

Terminal Servers give VAXcluster systems a number of benefits, the most important of which is easy, transparent user access to any processor. Other advantages include:

- Dynamic load balancing across the VAXcluster for optimal resource utilisation.
- Failover from a downed processor to a functional one.
- Terminal locking for increased security.
- Multiple simultaneous terminal sessions.



Cluster members can communicate via multiple link options.

Ethernet Network Interconnect (NI) clusters

Ethernet-based or Network Interconnect (NI) systems enable you to integrate low-end systems and workstations into a cluster environment. When configured, members of a workgroup or team can share common large disks, data and expensive peripheral devices and still have a dedicated CPU.

The other chief advantage of NI clusters is that system management is centralised — including software installation, disk maintenance and backups.

Mixed Interconnect...

A Mixed Interconnect VAXcluster is a combination of CI-based, DSSI, FDDI and NI-based machines in a VAXcluster configuration. Currently, a VAXcluster system can support up to 96 nodes.

... and Mixed Architecture.

What's more, VAX and Alpha systems can coexist in a mixed-architecture cluster!

Please see the Software Product Description for full details of clustering hardware prerequisites, and versions of software required for a mixed-architecture cluster of VAX and Alpha.

Product Name	SPD
VAXcluster Software for OpenVMS VAX	29.78
VMScluster Software for OpenVMS Alpha	42.18

DECwindows Motif

THE INDUSTRY-STANDARD GUI

With the creation of the Open Software Foundation (OSF) in May '88 came a major initiative to create a standards-based user interface based upon the best technology available in the industry at that time.

The primary criteria in establishing the user interface that was to become known as Motif were:

- ◆ Technical excellence.
- ◆ Compliance with industry standards.
- ◆ Workability in heterogeneous environments.

The OSF process involves technology submissions from member companies. As a result, some of the best technology from several companies has made its way into Motif. Digital tendered its Toolkit widget, User Interface Language (UIL) and Window Manager.

DECwindows Motif provides you with a fully OSF/Motif compliant user environment (including the Motif Window Manager), as well as containing the current DECwindows X User Interface (XUI). Although the Motif Windows manager is the default window manager, users can easily switch to the XUI window manager.

OSF/Motif components

The core components of the OSF/Motif technology include a tested API comprising a User Interface Language (UIL) and a user interface toolkit, a window manager and complete set of documentation, including style guide.

- Application Programming Interface (API): Includes the OSF/Motif toolkit and the User Interface Language. Motif's UIL



Motif shows the way forward.

compiler and the Mrm library facilitate the separation of the presentation characteristics of an application from its functional code.

- Interface toolkit (Xm widget set): The widget set is a set of building blocks from which the user interfaces are constructed.
- Window Manager (mwm): This offers a standard environment for manipulating application windows.
- OSF/Motif Style Guide: A guidebook which enables applications to have a consistent look and feel.

Benefits

- Ease of use: With Motif, users can quickly and easily move across applications, even systems, without the need for major re-learning.
- Standards and innovation: With a policy of adopting existing standards, or —

where these don't exist — inventing them, we can expect OSF/Motif to continue to lead the industry as the preferred Graphical User Interface (GUI).

- Industry presence and acceptance: Since some of the most important companies in the IT industry are represented in OSF, this guarantees the widespread acceptance and availability of Motif across a wide range of platforms. In Europe, this acceptance has been underpinned by the European Commission's acceptance of Motif as its preferred UNIX GUI.

Product Name	SPD
DECwindows Motif for OpenVMS	42.19
DECwindows Motif for the Sun SPARCstation	38.44

DECmigrate

THE IDEAL TOOL TO ASSIST YOUR MOVE TO ALPHA

DECmigrate allows you to translate — without recompiling — the binaries of ULTRIX/RISC applications to run under DEC OSF/1 on Alpha, and OpenVMS VAX applications to run under OpenVMS on Alpha. For users with many applications to transfer, it offers a shortcut to getting up and running on the powerful Alpha range of systems.

- ◆ Translates executable binary programs and sharable images to run on their corresponding environment on Alpha, regardless of source language used.
- ◆ Ideal where original source code has been 'lost'.
- ◆ Assists in transition from ULTRIX/

RISC to DEC OSF/1 on Alpha.

- ◆ Assists in transition from OpenVMS VAX to OpenVMS on Alpha.

For users of ULTRIX/RISC or OpenVMS VAX, DECmigrate simplifies the move to Alpha systems. It analyses your executable programs and, at your option:

- Generates equivalent, optimised Alpha executable programs, where possible.
- Identifies non-portable code that might need to be rewritten in order to run successfully on DEC OSF/1 or OpenVMS as appropriate for the Alpha family of systems.

Performance gains

DECmigrate operates much like a compiler, except that the input file is a binary

executable file rather than high-level language source code. Output is optimised Alpha Code, not interpreted or emulated code, and can be run on any Alpha, with or without DECmigrate. As a rule, the performance of a translated program on a Alpha system will be comparable to the performance of the original program on an ULTRIX/RISC or OpenVMS VAX system, but slower than if the program had been recompiled from source code on the Alpha system. DECmigrate can combine translated images with natively compiled images.

Product Name	SPD
DECmigrate for OpenVMS Alpha	39.44
DECmigrate for OpenVMS DEC OSF/1 Alpha	39.45

Digital Compilers

AN OVERVIEW OF DIGITAL'S COMPILERS AND RELATED PRODUCTS

DEC Ada

DEC Ada is Digital's validated implementation of the full ANSI/MIL-STD-1815A-1983 Ada Language. It also conforms to the Federal Information Processing Standard (FIPS-119). DEC Ada provides a modular structure for programs by allowing separate compilation of program units, as well as providing strong typing, tasking, exception handling, and other standard language features that are supported across implementations. The DEC Ada Professional Development Option (PDO) for DEC OSF/1 Alpha Systems and DEC OpenVMS VAX systems is available. PDO is a separately licensed product that increases productivity and performance while compiling Ada programs through the use of Smart Recompilation and Program Library File-Block Caching.

Available on DEC OSF/1 for Alpha; OpenVMS for VAX; OpenVMS for Alpha; RISC ULTRIX.

BASIC

Digital has been following an OpenVMS-based strategy for BASIC, with DEC BASIC available on both OpenVMS VAX and OpenVMS Alpha. DEC BASIC is a native compiler that provides Digital's leadership compiler code generation and optimisation technology for Alpha systems.

Microsoft Visual C++ V2.0 Development System for Digital Alpha

Microsoft's Visual C++ Development System for Digital Alpha V2.0 running on Windows NT is a powerful, visually oriented development environment. Visual C++ fully exploits the Windows NT operating system as the host environment, enabling seamless background compilation and multi-tasking with other applications. This product has been completely written from the ground up to be a 32-bit application that takes advantage of operating system features such as multi-threading. Visual C++ 2.0 provides a streamlined, integrated set of proven graphical that will speed the creation of OLE 2.0, ODBC, and Win32 applications. The Microsoft Foundation Class (MFC) Library 3.0 provides building blocks that encapsulate thousands of lines of reusable, robust, and optimised C++ code for Windows and OLE-based applications. Applications written to MFC 3.0 are 100% source code compatible across all platforms: they only need to be recompiled with the processor-specific Visual C++ compiler to produce executables for the different target platforms.

Currently available on the Intel, MIPS, MAC and Alpha platforms. A PowerPC version is planned to be released in mid 1995.

Digital Extended Math Library (DXML)

Digital Extended Math Library (DXML) is a set of math subroutine libraries that are optimised for Digital platforms. DXML provides four libraries: Basic Linear Algebra Subroutines (BLAS), Linear System and Eigenproblem Solvers, Sparse Linear System Solvers, and Signal Processing.

Available on OSF/1 Alpha, OpenVMS Alpha, OpenVMS VAX platforms.

VAX and DEC COBOL

VAX and DEC COBOL are native compilers for the OpenVMS VAX and OpenVMS Alpha platforms, respectively, which are high-level programming language compilers supporting the ANSI COBOL Standard X3.23-1985, and have been validated by NIST at the 'high' level. Both compilers support the ANSI features added by the X3.23a-1989 amendment, and provide a high-performance, optimising compiler environment.

VAX COBOL is integrated with the VAX Information Architecture, and includes various Digital extensions to COBOL, including screen handling (ACCEPT/DISPLAY) at the source language level. VAX COBOL includes support for the CDD/Repository and for the DML (data manipulation language) for VAX DBMS.

DEC COBOL includes Digital extensions to COBOL such as file sharing and the ANSI Report Writer facility, pointer data types, and some X/Open features. DEC COBOL has been designed to maximise compatibility at the source code level with VAX COBOL.

VAX COBOL is available on the OpenVMS VAX platforms; DEC COBOL is available on the OpenVMS Alpha and OSF/1 Alpha platforms.

Micro Focus COBOL

Micro Focus COBOL is a highly portable COBOL compiler environment, certified at the ANSI-85, XPG3/XPG4, and FIPS 21-2/21-3 COBOL language standards levels, which provides a consistent cross-platform environment for the development, maintenance, and deployment of COBOL applications. Micro Focus COBOL provides both an 'interpretative' mode for maximum portability of code and applications, and a 'native' mode, where maximum performance is obtained by compiling the application for a specific target system.

The Micro Focus product environment for Digital platforms consists of four components: Micro Focus COBOL compiler (including Animator, a visual COBOL debugger); Micro Focus Toolbox; Micro Focus Dialog System; and Micro

Focus Operating System Extensions.

Micro Focus COBOL is available on OSF/1 Alpha, ULTRIX/MIPS and SCO/Intel systems at present; future support is planned for NT/Alpha, and NT/Intel systems.

DEC Fortran

The existing Fortran products are fully validated ANSI 1977 Fortran implementations offering, in addition to ANSI functionality, a broad list of extensions. Each DEC Fortran implementation is an efficient, high-quality, highly optimised compiler, and the same language definition is offered on all platforms (apart from those features not supported by the targeted operating system).

DEC Fortran implementations on all platforms bar OpenVMS VAX share common front-end and back-end technologies. The back-end used on MIPS and Alpha is a new, highly-optimised, re-targetable back-end (GEM). The technology used for DEC Fortran for OpenVMS VAX is the time-proven VAX FORTRAN (renamed DEC Fortran in 1993), which is VAX specific. DEC Fortran on Windows NT also consists of the DEC Fortran front end and the GEM back-end.

DEC Fortran is available on the following platform combinations: OpenVMS VAX, OpenVMS Alpha, OSF/1 Alpha, Windows NT Alpha, ULTRIX/RISC.

DEC Fortran 90

The new ANSI and ISO Fortran standard defines a larger, more feature-rich language and provides a more robust set of language features that translate into productivity improvements for the scientific community. In the United States, the Fortran 90 standard and the older Fortran 77 standard co-exist, while in Europe, Fortran 90 is the only standard.

A new definition of how to develop parallel Fortran applications has been proposed, created by the High Performance Fortran Forum (HPFF) and referred to as the High Performance Fortran Specification. The HPF Forum, started in part as a result of proposals by Digital, is a consortium of vendors, users, research laboratories, and universities that set out to create an industry consensus on a small set of extensions to the new Fortran 90 standard, called the HPF extensions.

Digital's response to the new Fortran 90 standard and the HPF extensions is a new product called DEC Fortran 90, and is the newest member of the DEC Fortran family of COHESION compilers. It is a full-featured optimising compiler that uses

a new Fortran 90 front-end integrated with Digital's state-of-the-art back-end. The DEC Fortran 90 language is fully compliant with the ANSI and ISO Fortran 90 standards and supports a subset of the de facto standard High Performance Fortran (HPF) Language Specification.

Available for OSF/1 Alpha.

KAP™

The KAP products are optimising source-to-source pre-processors for Fortran and C. They provide two important capabilities: automatic performance tuning of applications, and automatic parallel decomposition.

Available for DEC OSF/1 Alpha, OpenVMS Alpha, OpenVMS VAX and ULTRIX/RISC.

Digital Parallel Software Environment

Digital has developed the Digital Parallel Software Environment to facilitate execution and debugging of parallel DEC Fortran 90 applications on Alpha OSF/1 machines. This software contains a parallel profiler and the system software, which consists of an execution environment and several utilities. The Digital Parallel Software Environment, in combination with the DEC Fortran 90 compiler, allows programmers to quickly develop parallel programs on a single workstation, then recompile and execute on parallel Alpha systems. Together, DEC Fortran 90 and the Digital Parallel Software Environment are commonly referred to as 'Digital's High Performance Fortran 90'.

Available for DEC OSF/1 Alpha.

DEC Pascal

DEC Pascal provides programming versatility which allows developers to create highly readable, modular, and transportable code for a wide range of applications. It is an implementation of the Pascal language that accepts programs compatible with either level of the ISO Specification for Programming Languages — Pascal [ISO 7185-1989(E)] as well as ANSI/IEEE 770X3.97-1989 (December, 1989). DEC Pascal also meets the Federal Information Processing Standard Publication (FIPS-109) requirements by accepting programs conforming to the ANSI standard. DEC Pascal also accepts many features from the Extended Pascal standard (ANSI/IEEE 770X3.160-1989 and ISO 10206).

Available for OpenVMS Alpha, OSF/1 Alpha, OpenVMS VAX.

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BASIC for OpenVMS	25.36
DEC Ada for OpenVMS Alpha Systems	45.00
DEC Ada for DEC OSF/1 Alpha Systems	45.89
DEC Ada for OpenVMS VAX Systems	26.60
DEC C for OpenVMS VAX Systems	25.38
DEC C for OpenVMS Alpha Systems	42.26
DEC C++ for OpenVMS VAX	37.39
DEC C++ for OpenVMS Alpha Systems	45.95
DEC C++ for DEC OSF/1 Alpha Systems	41.91
DEC C++ for ULTRIX	37.61
DEC COBOL for OpenVMS Alpha Systems	45.92
DEC Cobol for DEC OSF/1 Alpha Systems	51.16
DEC Fortran for Windows NT Alpha Systems	T0.03
DEC Fortran 90 for DEC OSF/1 Alpha Systems	46.41
DEC Fortran for DEC OSF/1 Alpha Systems	37.54
DEC Fortran for OpenVMS Systems	25.16
DEC Fortran for ULTRIX RISC Systems	33.05
DEC Pascal for DEC OSF/1	36.72
DEC Pascal for DEC OSF/1	42.46
DEC Pascal for OpenVMS	25.11
DEC Pascal for ULTRIX RISC	33.04
Digital Extended Math Library for DEC OSF/1 Alpha	41.86
Digital Extended Math Library for OpenVMS Alpha	41.84
Digital Extended Math Library for OpenVMS VAX	31.67
Digital Extended Math Library for ULTRIX	34.44
KAP for C for DEC OSF/1 Alpha	45.73
KAP for DEC C for OpenVMS Alpha and KAP for VAX C 1.	38.51
KAP for DEC Fortran	38.49
KAP for DEC Fortran for DEC OSF/1 Alpha	45.72
KAP for DEC Fortran for OpenVMS	38.50
KAP for ULTRIX C	38.52
Micro Focus COBOL Compiler and Development Tools for Unix	33.27
Micro Focus COBOL for UNIX on DEC OSF/1 Alpha System	52.83
Micro Focus COBOL with Toolbox for UNIX on DEC OSF/1 Alpha	52.86
Micro Focus COBOL/2 for SCO	42.63
Micro Focus COBOL/2 with Toolbox for SCO	46.31
Micro Focus COBOL/2 with Toolbox for ULTRIX/RISC Systems	46.30
Micro Focus Dialog System for UNIX on DEC OSF/1 Alpha Syst	52.87
Micro Focus Operating System Extensions (OSX) Server for Unix	52.84
Micro Focus Operating System Extensions (OSX) User for Unix	52.88
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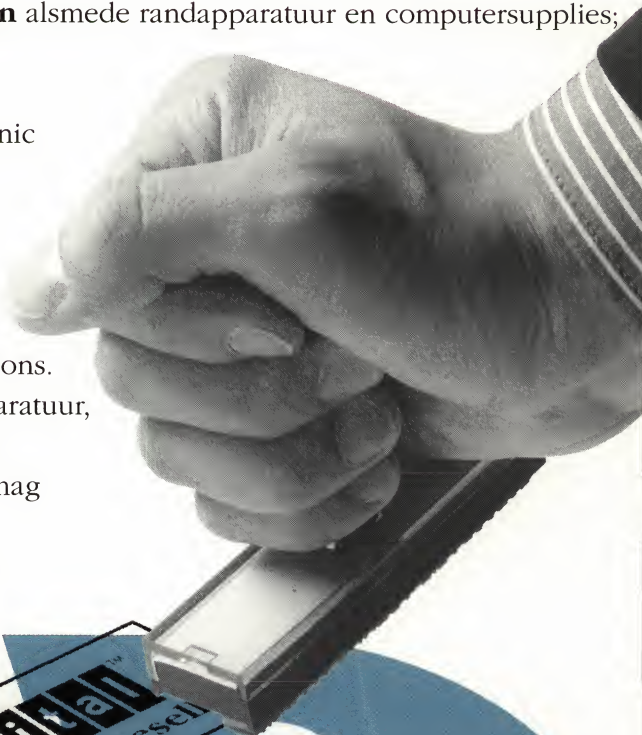
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